# SAGUARO LAND BULLETIN

## DESERT BOTANICAL GARDEN of ARIZONA

Vol. XXII January, 1968 No. 1

DBG Photo

*Echinocereus polyacanthus*, the Mexican Giant Claret Cup. (Article on page 5.)

REG MANNING

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Published and owned by the Arizona Cactus and Native Flora Society, sponsore of the Desert Botanical Garden of Arizona, P. O. Box 5415, Phoenix 85010. Saguaroland Bulletin attempts to promote the Garden and to provide information on the desert plants and their culture. Subscription $5.00 per year, the subscription including active membership in the Society and the Desert Botanical Garden. Issued 10 times a year.

W. HUBERT EARLE, Editor
LILLIAN DIVEN, Associate Editor

Vol. XXII JANUARY, 1968 No. 1



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## Desert Botanical Garden of Arizona

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GARDEN OPEN DAILY 9 A.M.—5 P.M.
Including Week-ends and Holidays

LOIS PORTER EARLE

*1907-1968*

*On January 4th, Lois Earle, the wife of our director, passed away unexpectedly. This is a serious blow to her many friends of the Desert Botanical Garden. During an association of over twenty years Lois earned the affection and respect of all who came in contact with her, and her passing leaves an unfillable void.*

*I first met Lois some twenty years ago when she and her husband, Hubert, were still living in a trailer in back of the Webster Auditorium. Mr. Marshall was Director then, and Hubert was horticulturist and general factotum, doing the odd jobs needed to keep the Garden alive. Lois worked at the Teachers' College in Tempe to help financially in keeping their family together and in raising their two young sons. The Garden was in no position to pay a decent living to those who worked there.*

*When Hubert Earle was chosen as Director of the Botanical Garden after the death of Mr. Marshall, he faced the almost impossible task of restoring our facilities and the financial structure so the Garden would become self-sustaining and solvent for the first time in its history.*

*I well remember these times when I was the youngest member of the executive board and we all were holding our breath to see if the Earles could pull a rabbit out of the hat. They did. And it was most apparent that the huge success would not have been possible if it had not been for the tireless and unselfish work of Lois Earle. Hubert is the first to admit that his wife was his right arm and then some. By taking hundreds of little and big tasks off his hands, she left him free to devote his talents to the needed improvements and changes which gradually built our venture into what it is today. Telephone calls, ordering or selling merchandise, sweeping, answering silly questions, mail and what not. Lois was always there and she did not have to be asked to help, either. And all this without compensation.*

*Lois Earle did not look for recognition, thanks or bouquets. Kindness and infinte patience were her outstanding qualities, and service to others was her creed. She never preached her religion but truly lived it. And therein lay her greatness.*

*As for us whose paths she crossed, we can only say that she will never be forgotten, never.*

## Phacelia campanularia — Hydrophyllaceae

# WILD CANTERBURY-BELL
# CAMPANULATE PHACELIA

**Phacelia campanularia** is a spring annual of the Upper and Lower Sonoran Zones, the Mojave and Colorado Deserts, and the arid mountains immediately adjacent.

It is a glandular hispid plant from four inches tall in open situations to two feet or more in protected spots. Here in the Garden and elsewhere in cultivation it is usually 6 to 8 inches tall, except for a few among rocks on a hillside, which reach a foot in height. Leaves are broad, ovate and irregularly crenate, or scalloped, up to two inches broad and three long. Glandular hairs covering the leaves, stems and calyces, produce dermatitis on many people.

Flowers of **Phacelia campanularia** are a deep blue-violet, in loose racemes, the corolla flaring and rather vase-shaped, reaching nearly one and one-half inches in length and breadth. The flowers are not always uniform, there being somewhat different forms in the southern and eastern Mojave Desert from plants in the western Colorado Desert. There is frequently a white spot at the base of each sinus, and occasionally the flower is white. The blossoming period extends from March through June.

**P. campanularia,** which derives its specific name from the flower's resemblance to Campanula, the bellflower, was found by Dr. C. C. Parry (1823-90), the American botanist commemorated in over a score of names of native plants.

Seeds of this attractive plant were sent to England soon after discovery, and **P. campanularia** is still a favorite garden flower there.

A number of the better seed catalogues in this country list the plant, which is easy to grow and suitable for use as an edging or low border.

DBG Photo

One of the handsomest phacelias, *P. campanularia* is equally suited to desert and non-desert gardens.

REFERENCES:


Jaeger, E., Desert Wild Flowers

Munz, P. A., California Desert Wildflowers

Royal Horticultural Society Dictionary of Gardening, Vol. III.

Shreve & Wiggins, Vegegation and Flora of the Sonoran Desert

## Echinocereus polyacanthus — Cactaceae

## Giant Claret Cup

**Echinocereus polyacanthus** is usually a multiple-headed clump, growing to two feet in diameter. Its light green elongate and cylindrical stems number 20 to 50 and are erect and up to one foot or more in height. There are 2 to 4 straight elongated central spines, and 8 to 10 small appressed radials. These are pale yellow at first, becoming dark and then fading to gray with age. Flowering late in May and June, the crimson or scarlet flowers remain open several days. The large, conspicuous flower may reach 2.5 inches in size. It is followed by a one-inch-wide spiny, globose, light red fruit.

This claret-cup hedgehog is found in the Mexican states of Chihuahua and Durango, and in western New Mexico into southeastern Arizona. Type locality is Cosihuiriachi, Chihuahua, Mexico. It ranges from 3500 ft. to 5500 ft. in elevation in the desert, desert grassland, and oak belts. It grows equally well on sandy silty loam and coarse rocky soils.

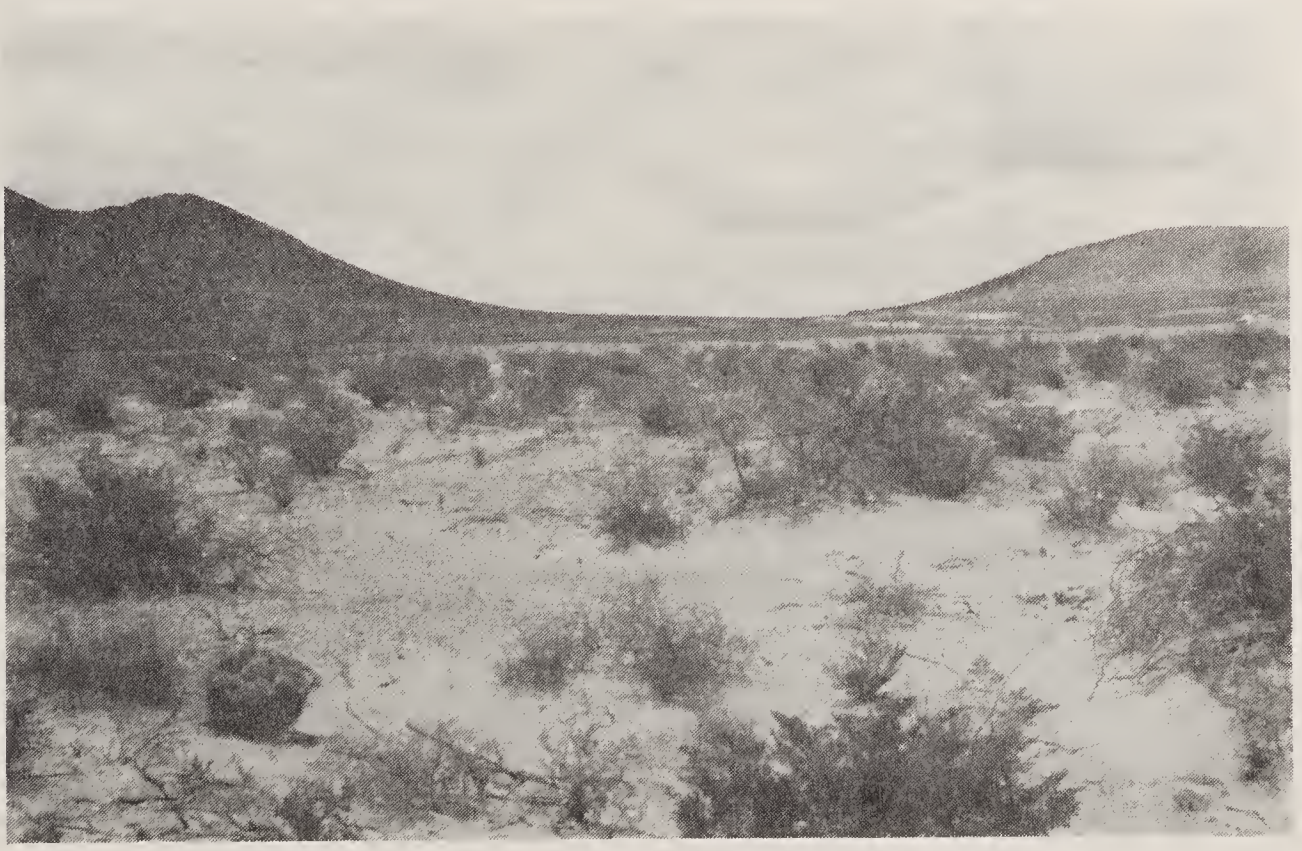
Cultivation of this, as with most hedgehogs, is relatively easy, the main requirements being sunlight and good drainage. In low desert areas partial shade is recommended, to afford protection from sunburn and dessication.

This is a good horticultural plant, yet it is infrequently used, and is seen primarily in gardens of cactophiles. It should be utilized more frequently for its profusion of bright flowers in early summer.

Cover photo and habitat photos accompanying this article were taken north of Camargo, Chihuahua, Mexico in May, 1966.

REFERENCES:

Benson, L., The Cacti of Arizona
Britton & Rose, The Cactaceae
Earle, W. H., Cacti of the Southwest



DBG Photo

Sandy plain habitat of *E. polyacanthus* near Camargo, Chih., Mexico. (See additional picture on page 6.)

DBG Photo

Giant Claret Cup in a typical clump. Flowers are crimson to scarlet.

**Because so many friends have wanted to have Lois Earle remembered here at the Garden which she loved and served, the**

**LOIS EARLE MEMORIAL FUND**

**has been established. Contributions will be used to add something beautiful and suitable to the Garden, although the exact nature of our memorial to Lois Earle has not, of course, been decided on yet. If you wish to be part of this remembrance, you may address your gifts to:**

**LOIS EARLE MEMORIAL FUND**
**DESERT BOTANICAL GARDEN**

## Precipitation Patterns at the Desert Botanical Garden for the Years 1966 and 1967

Rainfall measured in hundredths of inches.

| | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1966 | .26 | 1.08 | .24 | .00 | .00 | .00 | .42 | 1.55 | 2.28 | .25 | .27 | .54 | 6.89 |
| 1967 | .24 | .00 | .40 | .07 | .03 | .41 | 1.32 | .12 | .22 | .62 | 1.18 | 4.43 | 9.04 |

With the exception of February, the rainfall pattern in 1966 was close to average in amount and monthly distribution. The pattern in 1967 was abnormal in two respects. The above-average rainfall of November and December far exceeded that of the below-average regular rain season of July-August-September.

If the precipitation in January, February and March of 1968 is near average, we might well look forward to the best wildflower display in the desert since the classic year of 1941.

# ASPECTS OF THE DESERT

Gold hunter or nature lover, winter is your best time to hike to Weaver's Needle, the 4,535′ peak in the Superstition Mountains. Weather is fine and snakes are dormant. The National Park Service conducts nature hikes here during winter months, and seekers of the Lost Dutchman Mine prospect hereabouts the year around.

# YUCCA INTERMEDIA McKelvey

DBG Photo

An opened-up blossom of Y. *intermedia* shows the pubescent filaments.

**Yucca intermedia** is a small to medium sized yucca which is acaulescent or short-caulescent on semi-erect stems. The clump may have from one to three or four heads of numerous ascending leaves. These are slender and long-tapering from base to acuminate apex. Attaining a length of 60 cm., the leaf is straight, but not rigid; flat on the upper surface and convex below. Leaf margins are smooth, white to gray, and mostly-nonfiliferous. Flowering occurs from April through June. Usually paired, the flowers are crowded in a simple inflorescence rising from a short scape to a height of 1.5 meters. The campanulate or globose flowers are large, being as much as 6 cm. in length. Segments are cream or greenish, often tinged with rose or brown. Filaments are about 2.5 cm. long, slender, and pubescent. Pistil is 3 cm. long and the style is white or pale yellow-green. Fruit is a tough thick-wall capsule, oblong-cylindric in form, and sometimes constricted. Medium in size, it measures to 6 cm. in length and 2.5 cm. in breadth. Capsules are dehiscent, releasing medium-to-large dull or glossy black seeds.

**Yucca intermedia** is limited to central New Mexico between the Rio Grande and Pecos rivers. It ranges north from mid-state to near the border of Colorado on open grassland plains and up into pinyon-juniper areas.

This species is similar in form and

DBG Photo

Note the short scape with inflorescence starting just above leaf tips.

appearance to **Yucca glauca** and can be utilized in like manner for landscaping a desert garden. In low desert areas having high summer temperatures it is best planted in a site affording partial shade. It can be utilized in basic foundation planting or in groupings at accent points or along garden boundaries. Being of medium size and unarmed, it can also be installed in patio and porch planters.

Propagation is by seed and germination percent of fresh seed is high. Growth rate is slow, however, and quite a period of time is required to bring seedlings to a flowering state. A partially shaded site having well-drained soil is preferred and supplemental water should be given when needed.

REFERENCES:

McKelvey, S.D., Yuccas of the Southwestern United States. Part II.

Webber, J. M., Yuccas of the Southwest, U.S.D.A. Monograph No. 17.

DBG Photo

*Y. intermedia* flowers are pendant, globose, and rather large.

DBG Photo

Capsules of this yucca are open, and some are constricted midway.

# THE LIBRARY PATIO

Our new library wing, with its porch extended across the south side of the auditorium, has made the patio exceptionally handsome. The buildings of sand-colored stucco are background for the varied pastel tints of the Mexican adobe roof tiles, for the dark-stained ponderosa pine used in beams and posts, and for the wall lamps of wrought iron and amber glass.

DBG Photo

We knew the changes would make our unroofed, low-walled patio more attractive, but there are also unexpected "bonuses," such as the interplay of sun and shadow, the changing angles as one

walks around the patio, and the way the library doors act as a double mirror, reflecting the cactus in the adjoining bed.

Members who have visited the Garden recently have seen all this, and more will be here to enjoy it during the Cactus Show in February, for the patio planters and large planted jars entered in the Show will be displayed to advantage along the porches.

DBG Photo

# OPUNTIA COMPRESSA — CACTACEAE

## TUBEROUS PRICKLY PEAR

DBG Photo

**Opuntia compressa** var. **macrorhiza** is the common form found in the higher elevations of the southwest. It forms a low prostrate clump of orbicular to obovate creeping stems, each about 4 inches long and ⅜ inches thick. The joints or pads are dull green and appear wrinkled, with large areoles. Roots are tuberous, sometimes thickened to several inches in diameter. Not all aeroles are spine bearing, and sometimes they are all spineless. When present, the stout rigid spines number two or three and these are 1 to 1½ inches long and unequal. Glochids are numerous and yellow to brown.

The large flowers, nearly three inches in diameter, have light yellow petals with an orange or reddish center. Fruit is fleshy, narrowly obovoid to cylindrical, and about two inches long. It is smooth and turgid, green to yellow or red, and edible. The seeds are about 3-16 inch in diameter with broad margins.

A species from medium or high elevations, it requires partial shade when planted in the low desert and more water than is needed by most prickly pears. Horticulturally it is a good rockery plant and can be planted with **Echinocereus melanacanthus** and **Coryphantha vivipara** which have similar requirements. It is cold-hardy, enduring even below zero degree temperatures, and will withstand long periods of drought. It thrives equally well on coarse rocky soils or high-humus-content woodland soils.

TYPE LOCALITY: Gila County, Arizona.

DISTRIBUTION: Arizona, New Mexico, Colorado, and southern Utah.

REFERENCES:

Benson, L., The Cacti of Arizona
Britton and Rose, The Cactaceae
Earle, W. H., Cacti of the Southwest
Marshal, W. T., Arizona's Cactuses.

## CACTOMANIAC MEETING, FEBRUARY 6

Cactomaniacs, the informal group of men and women interested in the desert and the Garden, will hold their regular meeting on February 6, at 8:00 P.M. All members and interested friends are requested to attend this particular meeting if they possibly can, as matters of importance to the Garden will be brought before the meeting.

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## 1968 — STARTING OFF WITH OFFSET

We hope you've noticed the sharper, cleaner look of this issue. The reason for it is that our printing has been changed to the offset process. Without burdening you with technicalities, we can explain that the change will mean pictures with finer detail, more flexibility in layout, and use of different papers to make the Bulletin more attractive.

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## GARDEN ACTIVITIES

### JANUARY

| | | | |
|---|---|---|---|
| Wed. | 3rd | CLASSES—Deserts and their Plants | 3 & 8 P.M. |
| Thurs. | 4th | LECTURE—Arizona Trees & Shrubs | 3 P.M. |
| Sat. | 6th | NATURE TRIP | 9 A.M. |
| Sun. | 7th | LECTURE—Arizona Birds & Animals | 3 P.M. |
| Wed. | 10th | CLASSES—Desert Succulent Plants | 3 & 8 P.M. |
| Thurs. | 11th | LECTURE—Arizona Scenics | 3 P.M. |
| Sun. | 14th | LECTURE—Unusual Plants | 3 P.M. |
| Wed. | 17th | CLASSES—Culture of Desert Succulent Plants | 3 & 8 P.M. |
| Thurs. | 18th | LECTURE—Cacti in Flower | 3 P.M. |
| Sun. | 21st | LECTURE—Mexican Cacti | 3 P.M. |
| Wed. | 24th | CLASSES—Identification of Desert Trees & Shrubs | 3 & 8 P.M. |
| Thurs. | 25th | LECTURE—Arizona Cacti | 3 P.M. |
| Sun. | 28th | LECTURE—Arizona Wildflowers | 3 P.M. |
| Wed. | 21st | CLASSES—Culture of Desert Trees & Shrubs | 3 & 8 P.M. |

### FEBRUARY

| | | | |
|---|---|---|---|
| Thurs. | 1st | LECTURE—Arizona Trees & Shrubs | 3 P.M. |
| Sat. | 3rd | DESERT FIELD TRIP for Evening Class | 9 A.M. |
| Sun. | 4th | LECTURE—Arizona Birds & Animals | 3 P.M. |
| Wed. | 7th | DESERT FIELD TRIP for Afternoon Class | 9 A.M. |
| Thurs. | 8th | LECTURE—Arizona Scenics | 3 P.M. |
| Sat. | 10th | NATURE TRIP | 9 A.M. |
| Sun. | 11th | LECTURE—Unusual Plants | 3 P.M. |
| Sun. 18th to 25th | | 21st ANNUAL CACTUS SHOW | 9 A.M. to 5 P.M. |
| Thurs. | 29th | LECTURE—Cacti in Flower | 3 P.M. |

# SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XXII February, 1968 No. 2

DBG Photo

Red spines and yellow-red flowers of *Ferocactus pilosus.* (See p. 16)

REG MANNING '67

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Including Week-ends and Holidays

# Editor's Notes

Many inquiries are coming in concerning the **21st Annual Cactus Show** which will be held February 18th through the 25th in the Garden's Webster Auditorium.

The Show is again co-sponsored by the Phoenix Gazette and the Garden. Mr. Lowell Parker, Managing Editor, and Walt Suft, Public Activities Manager, will take care of the publicity, which began during the last week of January and will continue until the Show is over.

The classifications list is about the same as last year's, except for an additional class of drawings (ink, pencil, chalk) in Section V, the Arts Section. All entries in the painting and drawing classes should be entered by 5 p.m. on Wednesday, February 14. Dish gardens, arrangements, specimen plants and other exhibits may be entered from 9 a.m. on Thursday, February 15th until the deadline at 4 p.m. on Saturday, February 17th.

All plants should be named, and it is hoped that names will be given for the live and dried materials used in arrangements. So many of our visitors are disappointed when they cannot learn the identity of the unusual materials they see in our shows.

Judging will begin at 7 p.m. on Saturday, February 14, and all awards will be placed prior to the Show opening on Sunday, February 15, at 9 a.m. Trophies will be awarded for sweepstakes, and smaller trophies for winners in classes with many entries. Ribbons will be awarded for First, Second, Third, and Honorable Mention.

There is no entry fee, and entries are welcome from all persons interested in desert plants and materials.

**Did you know** that it costs the Garden **30c,** that's right — THIRTY CENTS — to mail you your SAGUAROLAND BULLETIN if you don't give the Garden your new mailing address?

It works this way: We mail you your Bulletin at the new six-cent rate (50 per cent more than in 1967). If the Bulletin is undeliverable because of your moving, the Post Office returns it at 8c cost, plus a "Correct Address Request" costing an additional 10c. Then, with the correct address on a **new** envelope plus another 6c stamp, it is re-mailed to you. Six plus eight plus ten plus six equals thirty. So, remember us, and please be considerate of all your magazine publishers by keeping all informed of your new address.

Your Editor wishes to express deep and sincere thanks to all the wonderful members, friends, associates, cactus clubs, and others, here and abroad, for their messages of condolence at the time of the sudden passing away of my helpmate, Lois.

She was stricken November 28 with a coronary occlusion, hospitalized until December 30th, and returned home in good health, but had another attack on January 4th. Her passing leaves a void in our organization that is hard to fill, and a pain in all our hearts. Please believe that your thoughts and prayers have been a solace to our family and to the Garden staff.

# FEROCACTUS PILOSUS (Galeotti) Werd. CACTACEAE

**Ferocactus pilosus** is a large barrel cactus of the high desert in central northern Mexico. It may be a simple globose or columnar plant, or multiple stemmed with branches proliferating from the base. Height extends up to eight or more feet. There are from 13 to 20 compressed ribs that are undulate between the circular areoles. The radial spines are modified into soft white hairs ¾ to 1½ inches long. These are numerous and arranged around the margin of the areole. The central spines are variable in form and color ranging from purple to bright red, and pale yellow on aging. Numbering six or more, these are annulate-ringed and more or less awl-shaped. The upper spines are erect, the lower are radiating and curved outward and down.

Flowers are one inch long and vary in color from yellow to red, or red on the outside and yellow within. The dried floral segments are retained on the fleshy yellow acidic fruits which are dehiscent by a basal pore. Seed is brownish and quite small.

This plant is found growing at elevations from 4,500 to 6,500 feet on flats, alluvial slopes, and hillsides in the states of Coahuila, Durango, San Luis Potosi, and Zacatecas, Mexico.

**Ferocactus pilosus** is a strikingly beautiful species and it has been employed along some Mexican highways for roadside beautification. This plant would be hardy in most desert gardens, and, being of slow growth, it can be grown as an indoor specimen plant in colder climes if given adequate light.

REFERENCES:

Backeberg, C. — Die Cactaceae.
Britton and Rose — The Cactaceae.
Lindsey, G. — Cactus and Succulent Journal, Vol. XXVII, Nov.-Dec. 1965, No. 6.

DBG Photo

A handsome clump of *Ferocactus pilosus,* photographed in habitat slightly south of Saltillo, Coahuila, Mexico.

Rafinesquia neomexicana

Compositae

# DESERT CHICORY

DBG Photo

Another popular name for *Rafinesquia neomexicana* is "Desert Dandelion" for its leaf and flower forms, if not for color.

When winter rains are above normal (as were our December 1967 rains) this white-flowered member of the Chicory Tribe of the Compositae, or Sunflower Family, is a conspicuous plant on the desert plains and mesas from February, or earlier, through July.

**Rafinesquia neomexicana is** a branched annual with rather weak, and often zigzag, purplish stems. It is found in the shade of desert shrubs and trees, frequently climbing through such plants. The white outer rays of the flower heads have rose-colored veins on the underside. The heads are relatively large (to 1½ inches across) and solitary, at the tips of the branches and branchlets.

This Desert Chicory is similar in appearance to the widespread blue-flowered chicory, an Old-World weed (**Chicorium intybus**) found in some Arizona localities, but most common in the northern states.

Constantine S. Rafinesque (1783-1840), for whom the genus was named, was a flamboyant eccentric, a scholarly hermit, a traveler — and a naturalist, as well.

Distribution of **Rafinesquia neomexicana** extends from low desert to desert grassland at elevations of from 200 to 3000 feet. It is found from western Texas to Baja California, Mexico, and north to southern Utah.

REFERENCES:

Dodge, Natt N., Flowers of the Southwest Deserts
Jaeger, E. C., Desert Wild Flowers
Kearney & Peebles, Arizona Flora
Shreve & Wiggins, Vegetation and Flora of the Sonoran Desert.

# YUCCA ALOIFOLIA L.

DBG Photo

**Yucca aloifolia** is a slender, short-branched, arborescent plant which is cespitose and frequently forms large clumps. The medium-to-long leaves are dark green with brown pungent points. Leaves are ascending, flat, dagger-like, thickened and rigid with denticulate horny margins. The inflorescence is a broad, short, compacted panicle borne on a very short stalk. Flowers are cream colored, the petals are tinged with green and the outer segments are purplish at the tips and base. Style is short and oblong. Fruit is nearly black, of the baccate type, and it has a fleshy, edible, purple pulp. It is indehiscent, stalked, and oblong-prismatic in shape. The thick seeds are glossy black and oval or round.

**Yucca aloifolia** ranges in the Atlantic and Gulf States of Louisiana, Alabama, Florida, Georgia, and South Carolina. It also is found at Vera Cruz on the Mexican east coast, Jamaica, and the Virgin Islands. In the United States it grows in a wild state only near sea level, but in the islands it reaches much higher elevations.

Taking basal offsets or stem cuttings is the primary means of propagation. Cuttings are easily rooted and the stump remaining will produce many new offsets which can be removed and also be rooted. **Yucca aloifolia** is adaptable to low desert conditions in spite of its being a coastal or insular species. It thrives best where there is partial shade and higher humidity. In full sun it will have reduced leaf size and be subjected to sunburn. It should have supplemental water during the dry summer months. At the Desert Botanical Garden it has withstood temperatures down to 17 degrees F. without damage.

In cultivation in Europe for over 350 years, this species is one of three non-desert yuccas which have been also utilized in the southwestern United States for landscaping. It is employed for specimen and foundation plantings especially on east and north exposures. It is a welcome addition to the desert garden scene where adequate space is available.

REFERENCES:

Bailey, L. H. — The Standard Cyclopedia of Horticulture.

Trelease, W. — The Yucceae, Rpt. Mo. Bot. Gard., 1902.

DBG Photo

# ASPECTS OF THE DESERT

57 years ago this month the completion of Roosevelt Dam impounded the waters of Tonto Creek and the Salt River and formed Roosevelt Lake. Phoenix, 50 mi. WSW, irrigates crops with this water. Cactus shown here are Chain-fruit Cholla and Desert (or Engelmann's) Prickly-pear.

# On Monstrosity in Cactus

The spontaneous appearance of monstrosity has never been fully explained, but various theories have been advanced as to the causes. Monstrosity appears almost exclusively in older plants, and its appearance may be described as looking like a cancerous growth.

(Somewhat different are crests, or fasciations, which are usually fan-shaped or comb-shaped. No definite conclusions have been drawn for this growth pattern. Monstrosity is an erratic pattern of growth, whereas fasciation consistently results in a crest.)

Recently a friend of mine dropped in and brought me two monstrous offsets of **Ferocactus acanthodes.** I knew right away where he found them. The northeastern part of Paradise Valley in central Arizona, adjacent to the city of Phoenix, is full of them, and it has often been noted that the two most prevalent cacti at this location, **F. acanthodes** and **Opuntia fulgida,** show almost uniformly signs of monstrosity with age. Crests are also rather common in the vicinity, most notably among **Echinocereus engelmannii.**

The late W. T. Marshall was of the opinion that these forms are caused by radioactivity or possibly by the action of cosmic rays, both of which could produce the changes in the cells causing abnormal growth. Radioactivity from certain trace minerals in the soil seems to be more logical than other theories, and the two little specimens brought to my office seem to bear this out. Lee Faber, who brought them in, reported that both specimens registered notably on his geiger counter, and that that was the reason for bringing them to me.

It is well known that certain plants have an affinity for certain trace minerals in the ground, (common cattail for gold, or locoweed for selenium) so why not certain cacti for uranium or thorium or whatever the radioactive substance might be.

This could well be a project for further exploration for botanists or botanical students who, at their university, have facilities for accurate chemical analysis of the affected plants as well as more accurate measuring instruments than a geiger counter to check on radioactivity of monstrosities as against the natural background reaction.

—C.C.M.

DBG Photo

*O. fulgida,* variety *monstrosa*

DBG Photo

Normal form of *Opuntia fulgida*

DBG Photo

*Lophocereus schottii* var. *monstrosus* forma *obesa*, or Totem Pole Cactus

DBG Photo

The normal form of *L. schottii*, which is known as the Senita

DBG Photo

*Cereus peruvianus* var. *monstrosus*, ribs are broken into odd tubercles.

DBG Photo

The regular *Cereus peruvianus* has continuous ribs along the stems.

## ADDED FIELD TRIPS

Spring flowering promises to be exceptional this year, so the Garden is adding extra nature field trips every Saturday from March 2nd on. Members and friends will meet at the Garden at 9 a.m. Be sure to bring lunch.

# CYLINDROPUNTIA KLEINIAE D.C. CACTACEAE

## Klein's Cholla

**Cylindropuntia kleiniae** is a low-to-medium shrubby cholla from two to four (and occasionally to ten) feet high. It is an open-branched bush of cylindrical stems with joints at acute angles. Woody at the base, the upright stems are glaucous, gray-green, and are strongly nippled with elongated tubercles. Terminal stema measure one-half inch in diameter. The large areoles are longer than wide, and bear white wool and small yellow-to-brown glochids. Spines vary in number from one to four and may attain a length of one inch. On young branches the slender spines are covered with yellow sheaths. The 1 to 1¼ inch purple flowers present from April to May are followed by spineless orange-red fruits. These are fleshy, obovate, to one inch in length and one-half inch in diameter. The fruit is tubercled and persistent.

Most of the Arizona plants are **Cylindropuntia kleiniae** subsp. **tetracantha** of diploid chromosome number. The Texas and Mexican plateau plants are triploids and tetraploids.

Type locality: Listed only as Mexico.

Distribution: Klein's Cholla ranges from 2,400 to 4,500 feet elevation in southern Arizona, southern New Mexico, Texas, and northern Mexico.

Many fruits of **Opuntia kleiniae** do not produce viable seed, but propagation is easily effected with stem cuttings. The orange-red fruit make it a very attractive specimen plant and it has wide limits of tolerance to temperature, soil and elevation. The only limiting factor seems to be a need for more water than is required by most cylindropuntias. In most low desert occurences of this species, it is found growing adjacent to washes or stream beds where water is available more frequently. This species is subject to cochineal scale infestation, but period-

P. Fischer Photos

*C. kleiniae* from (L) Globe, Ariz. and (R) Bear Canyon, Ariz. showing the variability within the flowers of this species.

ic spraying during spring and summer months will alleviate this condition.

REFERENCES:

Britton and Rose — The Cactaceae

Earle, W. H. — Cacti of the Southwest.

Fischer, P. C. — M.S. Thesis, Graduate College University of Arizona. Taxonomic Relationship of **Opuntia kleiniae** D.C. and **Opuntia tetracantha** Toumey)

Marshall, W. T. — Arizona's Cactuses.

DBG Photo

Note strong tubercles, long spines and relatively thin stems

DBG Photo

Small, spineless fruits of *C. kleiniae*

**Because so many friends have wanted to have Lois Earle remembered here at the Garden which she loved and served, the**

**LOIS EARLE MEMORIAL FUND**

**has been established. Contributions will be used to add something beautiful and suitable to the Garden, although the exact nature of our memorial to Lois Earle has not, of course, been decided on yet. If you wish to be part of this remembrance, you may address your gifts to:**

**LOIS EARLE MEMORIAL FUND**
**DESERT BOTANICAL GARDEN**

## A VOID — AN APPEAL TO FILL IT

The death of Lois Earle, loved by all, left a great void. Glaringly apparent to those close to the Garden, it led to a meeting one afternoon, devoted to finding ways of helping.

The group obtained from Mr. Earle a list of things which needed doing. They then framed an appeal to the many friends of the garden, in form of a letter. In it they, the Garden's friends and members who lived reasonably near Phoenix, were asked to join a Service Group. The letter said in part:

"Things which need doing range from indoor work such as typing and filing to outdoor work making plant labels and cleaning seed. **Every thing** we do will relieve the staff to do their own jobs better."

They were also asked to specify the time they can contribute: every week, every two weeks, every four weeks; morning, afternoon or both. In addition, they were asked for suggestions to help the program.

The response has been most gratifying. By the end of January well over thirty people have joined the Service Group, and replies are still coming in. Of special note is a young member, a Boy Scout, who has enlisted his Scout Troop in contributing their Saturday mornings.

The members of the Committee have but one concern — constant continuation of the help our Garden needs in small and larger ways. The many unsung things Lois Earle did for the Garden, and the services our growing Garden will need more and more, these are job volunteers are needed for. This is why the Service Group now exists.

As the first letter about the Service Group said:

"Come join it!"

—F.C.B.

## GARDEN ACTIVITIES

### FEBRUARY

| | | | |
|---|---|---|---|
| Thurs. | 1st | LECTURE—Arizona Trees & Shrubs | 3 P.M. |
| Sat. | 3rd | DESERT FIELD TRIP for Evening Class | 9 A.M. |
| Sun. | 4th | LECTURE—Arizona Birds & Animals | 3 P.M. |
| Wed. | 7th | DESERT FIELD TRIP for Afternoon Class | 9 A.M. |
| Thurs. | 8th | LECTURE—Arizona Scenics | 3 P.M. |
| Sat. | 10th | NATURE TRIP | 9 A.M. |
| Sun. | 11th | LECTURE—Unusual Plants | 3 P.M. |
| Sun. 18th to 25th | | 21st ANNUAL CACTUS SHOW | 9 A.M. to 5 P.M. |
| Thurs. | 29th | LECTURE—Cacti in Flower | 3 P.M. |

### MARCH

| | | | |
|---|---|---|---|
| Sun. | 3rd | LECTURE—Mexican Cacti | 3 P.M. |
| Wed. | 6th | CLASSES—Deserts and their Plants | 3 & 8 P.M. |
| Thurs. | 7th | LECTURE—Arizona Cacti | 3 P.M. |
| Sat. | 9th | NATURE TRIP | 9 A.M. |
| Sun. | 10th | LECTURE—Arizona Wildflowers | 3 P.M. |
| Wed. | 13th | CLASSES—Desert Succulent Plants | 3 & 8 P.M. |
| Thurs. | 14th | LECTURE—Arizona Trees & Shrubs | 3 P.M. |
| Sun. | 17th | LECTURE—Arizona Birds & Animals | 3 P.M. |
| Wed. | 20th | CLASSES—Culture of Desert Succulent Plants | 3 & 8 P.M. |
| Thurs. | 21st | LECTURE—Arizona Scenics | 3 P.M. |
| Sun. | 24th | LECTURE—Unusual Plants | 3 P.M. |
| Wed. | 27th | CLASSES—Identification of Desert Trees & Shrub | 3 & 8 P.M. |
| Thurs. | 28th | LECTURE—Cacti in Flower | 3 P.M. |
| Sun. | 31st | LECTURE—Mexican Cacti | 3 P.M. |

# SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XXII March, 1968 No. 3

DBG Photo

*Aeonium sp.* exhibited by Mrs. Sylvia Schoenfeld. These are hard plants to grow in the dry Arizona climate.

REG MANNING

# SAGUAROLAND BULLETIN

Published and owned by the Arizona Cactus and Native Flora Society, sponsore of the Desert Botanical Garden of Arizona, P. O. Box 5415, Phoenix 85010. Saguaroland Bulletin attempts to promote the Garden and to provide information on the desert plants and their culture. Subscription $5.00 per year, the subscription including active membership in the Society and the Desert Botanical Garden. Issued 10 times a year.

W. HUBERT EARLE, Editor
LILLIAN DIVEN, Associate Editor

Volume XXII | March, 1968 | No. 3



## Arizona Cactus and Native Flora Society

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GARDEN OPEN DAILY 9 A.M.—5 P.M.
Including Week-ends and Holidays

# REPORT OF THE 21st ANNUAL CACTUS SHOW

"Excellent", "Best show yet", "Beautiful plants", "Well-designed dish gardens and lovely arrangements" — were a few of the comments heard from the 11,880 visitors attending this most successful show ever held at the Garden.

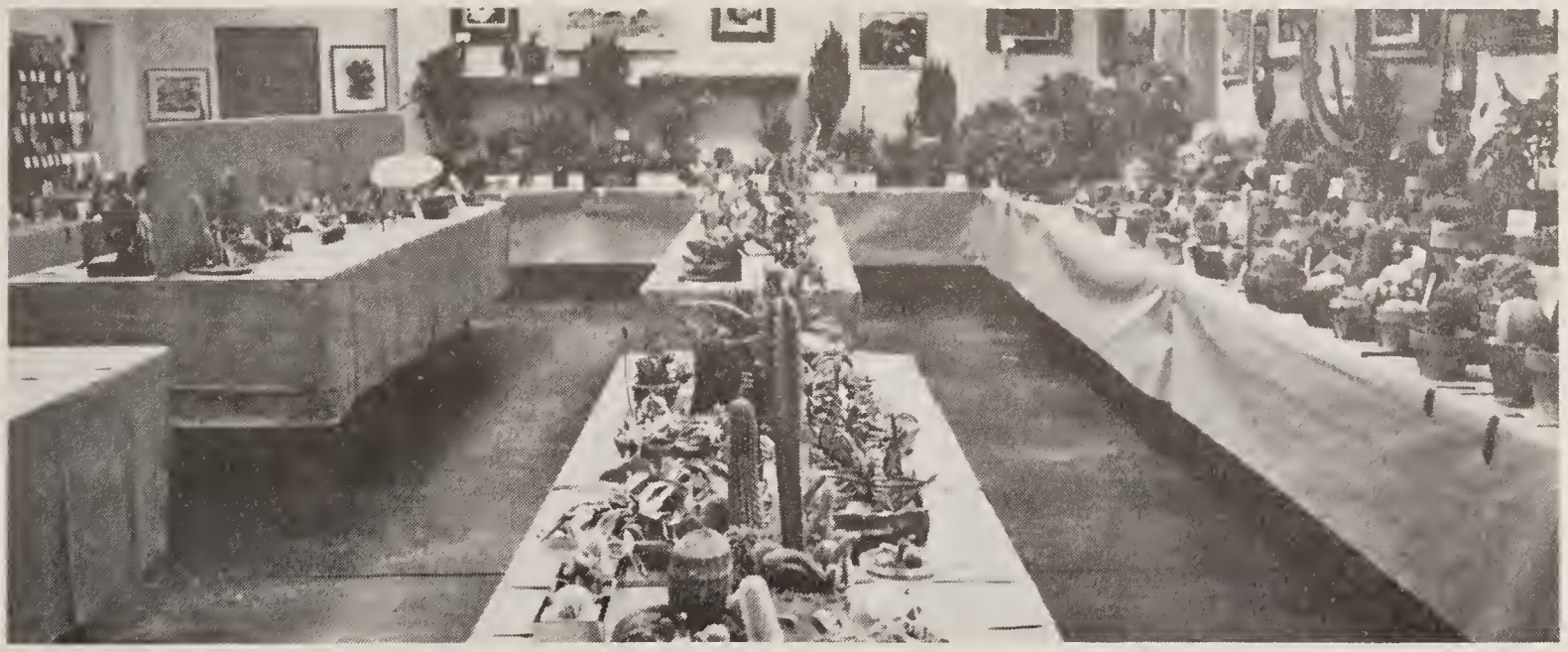
The show "spilled out" into our patio and the corner of our new Library Building porch, due to the enthusiastic exhibitors entering a record 765 exhibits in the categories shown on the following pages. Quality in the various classes was higher than in last year's show, and it looks as if we'll have to arrange for larger space for the 22nd Annual Show next year.

Again, we had another fine panel of judges who were: Cacti and Succulents, Mrs. A. W. Doney of Monrovia, Calif., and Miss Virginia Martin of Arcadia, Calif.; Dish Gardens and other Arrangements, Mrs. M. Y. Carpenter, Miss Betty Schimek, Mrs. S. R. Stevens; Arts, Mr. and Mrs. Salvatore Macri; Photography, Mr. and Mrs. Herb McLaughlin. We greatly appreciate their services.

Quite noticeable this year was the outstanding use, in dish gardens and arrangements, of the plants themselves for color and design. The quality of the cacti and succulents on the whole was excellent, and some of the entries were in superlative condition, better than we have seen in any other show.

As we have said in the past, a show can only be successful if its members will volunteer their aid in its daily presentation. We had 68 volunteers who gave from a half-day to eight days of their time as hostesses, guards, serving lunches, selling plants, acting as guides, packaging seed and keeping the paths clean. The following are the volunteers who helped create another great show:

Mrs. Ray Ashley, Mr. and Mrs. Frederick C. Baselt, Mrs. Brenda Beaulier, Mrs. Zella Maye Brady, Mrs. John C. Cacheris, Mr. and Mrs. K. L. Carr, Mrs. Daniel B. Carroll, Mr. and Mrs. Harry S. Cellner, Mr. and Mrs. W. G. Cook, Mrs. Roy Cooper, Mr. and Mrs. Harold C. Covert, Mrs. Liscum Diven, Mr. and Mrs. J. Warner Dodd, Mrs. Helen Friedrichs, Mrs. Marshall K. Gebert, Mr. and Mrs. Charles F. Genasci, Mr. and Mrs. David Gourley, Mrs. Faith M. Haft, Mrs. Arthur W. Holt, Mrs. J. S. Houck, Mr. and Mrs. Bert Jinneman, Lawrence C. Johnson,



DGB photo

A portion of the Show with potted cacti on the right centerpieces in foreground and other arrangements.

Mr. Bernard Lewin, Mr. and Mrs. Dugan Lewis, Mr. and Mrs. Salvatore Macri, Dr. and Mrs. Niels G. Madsen, Mr. and Mrs. J. C. McDougall, Mr. Rodrick G. McGill, Mr. and Mrs. Charles E. Mieg, Mrs. Valerie J. Nelson, Mr. and Mrs. A. Paul Neuman, Mrs. Jesse M. Nixon, Mr. C. C. Pidgeon, Mr. and Mrs. H. E. Pratt, Mrs. Esther Rasnick, Miss Ann Robbie, Mr. and Mrs. Roy G. Salaman, Mrs. Wm. M. Schoenfeld, Mrs. S. C. Schliep, Mr. and Mrs. E. H. Schrieber, Mrs. Clifford M. Schroeder, Mrs. Alice J. Schultz, Mr. Stanley C. Scott, Mrs. S. B. Spangler, Mr. Donald R. Squire, Mrs. F. C. Stiles, Mr. and Mrs. Vernon Tauer, Mrs. R. I. Turner, Mr. Richard Wadleigh.

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DGB photo

*Gymnocalycium saglione,* (ten inches in diameter) judged best cactus in the Show, exhibited by Alan Blackburn, Tucson, Ariz.

## SWEEPSTAKES WINNERS (21ST ANNUAL)

| | |
|---|---|
| CACTI | Mr. L. Bremer, Sun City, Ariz. |
| OTHER SUCCULENTS | Mr. Clifford M. Schroeder, 2126 Ventura Drive, Tempe |
| ARRANGEMENTS | Mrs. Lela Turner, 324 W. Siesta Way, Phoenix, Ariz. |
| ARTS | Mr. L. E. Woodruff, 705 E. Granada Road, Phoenix |

## TROPHY WINNERS

| | | |
|---|---|---|
| 1. | BEST CACTUS | Mr. Alan Blackburn, Rt. 9, Box 964 M. Tucson, Ariz. |
| 2. | BEST CRESTED CACTUS | Mr. Richard Moulis, 13431 N. 33rd Place, Phoenix |
| 4. | BEST COLLECTION OF 5 CACTI | Mr. L. S. Bremer, Sun City, Ariz. |
| 4. | BEST SUCCULENT OTHER THAN CACTI | Mrs. Sylvia Schoenfeld, 2007 E. Rancho Dr., Phoenix, Ariz. |
| 5. | BEST COLLECTION OF LEAF SUCCULENTS | Mr. Clifford M. Schroeder, 2126 Ventura Drive, Tempe, Ariz. |
| 6. | BEST DESERT TREES & SHRUBS | Mrs. F. M. Feffer, 7349 Clearwater Parkway, Scottsdale, Ariz. |

7. BEST DISH GARDEN — Mr. Clifford M. Schroeder, 2126 Ventura Drive, Tempe
8. BEST STRAWBERRY JAR — Mrs. Margaret Meyer, 502 W. Vermont, Phoenix
9. BEST PATIO PLANTER — Virginia Carnahan, 5705 N. 38th Ave., Phoenix
10. BEST CENTERPIECE — Mrs. Lela Turner, 324 W. Siesta Way, Phoenix, Ariz.
11. BEST MINIATURE ARRANGEMENT — Mrs. E. Comins, 10236 195th Dr., Sun City
12. BEST DRY ARRANGEMENT AGAINST THE WALL — Mrs. Ted Chambers, Rt. 3, Apache Jct.
13. BEST SUCCULENT ARRANGEMENT AGAINST THE WALL — Mrs. Joseph Nuber, 5305 N. 22nd Ave., Phoenix, Ariz. Nuber, 5305 N. 22nd Ave., Phoenix, Ariz.
14. BEST BLACK & WHITE PHOTO — Mr. L. E. Woodruff, 705 E. Granada Rd., Phoenix
15. BEST COLORED PRINT — Mr. L. E. Woodruff, 705 E. Granada Rd., Phoenix
16. BEST TRANSPARENCY — Mrs. Laurie Kriz, Route No. 1, Box 1705, Apache Jct.
17. BEST OIL PAINTING — Mrs. Ruth Noland, 4211 E. Roma, Phoenix, Ariz.
18. BEST WATERCOLOR PAINTING — Mrs. Adrian Roscoe, Rt. 1, Box 1680, Apache Jct.
19. BEST DRAWING — Mrs. Barbara Hovatter, Box 206, Salome, Ariz.
20. BEST NATURAL DESERT WOODS — Mrs. C. Minehart, Rt. 2, Box 279, Apache Jct.
21. BEST EDUCATIONAL EXHIBIT — Mr. Clifford M. Schroeder, 2126 Ventura Dr., Tempe
22. BEST OPEN: NON-COMPETITIVE — Mr. John Hales, 1641 E. Willetta, Phoenix, Ariz.

## TWENTY-FIRST ANNUAL CACTUS SHOW AWARD WINNERS

SECTION I. CACTI

CLASS A. POTTED PLANTS

Div. 1. OPUNTIA

1st, Allison Schoenfeld, 2007 E. Rancho Drive, Phoenix. 2nd, Clifford M. Schroeder, 2126 Ventura Drive, Tempe. 3rd, Robert Moulis, 13431 N. 33rd Place, Phoenix. 4th, Earl Pierson, 325 Willetta, Phoenix.

Div. 2. CEREUS

1st and 2nd, John B. Hales, 1641 E. Willetta, Phoenix. 3rd, Earl Pierson. 4th, Clifford M. Schroeder.

Div. 3. ECHINOCEREUS

1st Bernie Lewin, 2634 N. 56th Place, Scottsdale. 2nd, Clifford M. Schroeder, 3rd, C. C. Pidgeon, 7550 N. 16th St., Phoenix. 4th, Warner Dodd, 5305 N 22nd Ave, Phoenix.

Div. 4. REBUTIA

1st, Clifford M. Schroeder

Div. 5. CHAMAECEREUS

1st, Sandra Hovatter, Box 206, Salome. 2nd, Mrs. Richard Enz, 105 E. Cairo Drive, Tempe.

Div. 6. LOBIVIA

1st, John B. Hales. 2nd, Mrs. Sylvia Schoenfeld, 2007 E. Rancho Drive, Phoenix. 3rd and 4th, Earl Pierson.

DGB photo

*Coryphantha recurvata* (eleven inches in diameter) with a normal head, judged best crested cactus, exhibited by Bob Moulis, Tempe, Ariz.

Div. 7. ECHINOPSIS
1st, Bert Jinneman, 2135 N. Center, Mesa. 2nd, Earl Pierson, 3rd, Rodrick G. McGill, Rt. No. 1, Box 844, Glendale. 4th, Clifford M. Schroeder.

Div. 8. ARIOCARPUS
1st and 3rd, Rodrick G. McGill. 2nd and 4th, L. Bremer, Sun City.

Div. 9. STENOCACTUS
1st and 2nd, L. Bremer, 3rd, Earl Pierson.

Div. 11. ECHINOCACTUS
1st, Earl Pierson. 2nd, John B. Hales.

Div. 12. GYMNOCALYCIUM
1st and 2nd, Alan Blackburn, Rt. 9, Box 964 M, Tucson. 3rd, Clifford M. Schroeder. 4th, Rodrick G. McGill.

Div. 13. ASTROPHYTUM
1st, Bert Jinneman. 2nd, Rodrick G. McGill. 3rd, John B. Hales, 4th, Warner Dodd.

Div. 14. THELOCACTUS
1st and 4th, Clifford M. Schroeder. 2nd, Earl Pierson. 3rd, L. Bremer.

Div. 15. ECHINOMASTUS
1st, 2nd and t4h, L. Bremer. 3rd, Rodrick G. McGill.

Div. 16. CORYPHANTHA
1st, 3rd and 4th, L. Bremer. 2nd, Alan Blackburn.

Div. 17. MAMMILLARIA
1st, Alan Blackburn. 2nd, L. Bremer, 3rd, Rodrick G. McGill. 4th, John B. Hales. 4th, Mrs. Sylvia Schoenfeld.

Div. 18. EPIPHYLLUM
1st, Clifford M. Schroeder.

# ASPECTS OF THE DESERT

Dams on the Salt River of central Arizona have created four long, deep lakes in the desert. Canyon Lake, 47 miles east of Phoenix, is second in the chain descending from Roosevelt Lake, and is a popular boating and swimming resort.

DGB photo

Section of the potted specimen cacti and oil paintings

Div. 19. SEEDLINGS
1st, Bernie Lewin. 2nd, Mrs. F. M. Feffer, 7349 Clearwater Parkway, Scottsdale. 3rd, Mrs. Russell Slingerland, 8503 E. Heatherbrae Drive, Scottsdale.
Div. 20. ANY OTHER SPECIES
1st, Clifford M. Schroeder. 2nd and 4th, Alan Blackburn. 3rd, John B. Hales. 4th, Mrs. M. W. Pratt, 5416 E. Avalon Drive, Phoenix.
Div. 21. NOTOCACTUS
1st, Rodrick G. McGill. 2nd, Earl Pierson.
Div. 23. NEOPORTERIA
1st and 2nd, Earl Pierson.
Div. 24. PARODIA
1st, 2nd and 3rd, Alan Blackburn.
CLASS B. CRESTED PLANTS
Div. 1, CRESTED CACTI — own root
1st, 2nd and 3rd, Robert Moulis. 4th, Earl Pierson.
Div. 2. CRESTED CACTI — grafted
1st, 2nd and 3rd, Robert Moulis.
CLASS C. MONSTROSE PLANTS
1st, Clifford M. Schroeder. 2nd, Mrs. S. R. Stevens, 10311 E. McDowell, Scottsdale.
CLASS D. GRAFTED PLANTS
1st, Robert Molis. 2nd and 3rd, Mrs. Russell Slingerland. 4th, Allison Schoenfeld.
CLASS E. COLLECTIONS (5 different species of a genus)
1st, 2nd and 3rd, L. Bremer. 4th (twice) Earl Pierson.
SECTION II. SUCCULENTS OTHER THAN CACTI
CLASS A. POTTED PLANTS
Div. 1. AEONIUM
1st and 2nd, Mrs. Sylvia Schoenfeld. 3rd, Bert Hinneman.

Div. 2. AGAVE

1st, Henry C. Triesler, Jr., 324 E. Sheridan St., Phoenix. 2nd, Clifford M. Schroeder, 3rd, John B. Hales.

Div. 3. ALOE

1st, Rodrick G. McGill, 2nd, Mrs. Mary D. Forman, 4217 E. Marion Way, Phoenix. 3rd, Mrs. Arthur Holt, 4648 E. Palm Lane, Phoenix. 4th, Clifford M. Schroeder.

Div. 5. CRASSULA

1st, Mrs. Sylvia Schoenfeld. 2nd, Henry C. Triesler, Jr. 3rd, Mrs. Adena Leth, Box 110, Black Canyon Stage, New River.

Div. 6. DUDLEYA

1st and 2nd, Henry C. Triesler, Jr. 3rd and 4th, Rodrick G. McGill.

Div. 7. ECHEVERIA

1st, Rodrick G. McGill. 2nd, Mrs. Russell Slingerland. 3rd, Warner Dodd.

Div. 8. EUPHORBIA

1st, Mrs. Sylvia Schoenfeld. 2nd, Alan Blackburn. 3rd, Mrs. Lillian A. Lugibihl, 811 W. Howe, Tempe. 4th, Henry C. Triesler, Jr.

Div. 9. GASTERIA

1st, John B. Hales. 2nd, Henry C. Triesler, Jr.

Div. 10. HAWORTHIA

1st and 2nd, Rodrick G. McGill. 3rd, Earl Pierson.

Div. 11. KALANCHOE

1st, Henry C. Triesler, Jr. 2nd, Mrs. Mary D. Forman.

Div. 12. LITHOPS

1st, John B. Hales. 2nd, Mrs. F. M. Feffer.

Div. 13. MESEMBRYANTHEMUM

1st, Elva Covert, 6448 E. Pebble Drive, Mesa. 2nd, Bert Jinneman.

Div. 16. STAPELIA

1st, Mrs. Mary D. Forman. 2nd, Mrs. M. W. Pratt. 3rd, Rodrick G. McGill.

Div 17. YUCCA

1st, 2nd and 3rd, Clifford M. Schroeder.

DGB photo

A fine non-competitive display of Hoyas by John Hales, Phoenix, Ariz.

Div. 18. SEEDLINGS
1st and 2nd, Clifford M. Schroeder. 3rd, Mrs. Russell Slingerland.
Div. 19. ANY OTHER SPECIES
1st, Clifford M. Schroeder. 2nd, Mrs. Sylvia Schoenfeld. 3rd, John B. Hales.
CLASS B. COLLECTIONS (5 different species of a genus)
1st, Clifford M. Schroeder. 2nd and 3rd, John B. Hales.
SECTION III. DESERT TREES AND SHRUBS
CLASS B. SHRUBS
1st, Mrs. Lela Turner, 324 W. Siesta Way, Phoenix. 2nd, Clifford M. Schroeder.
CLASS C. DESERT BONSAI
1st, Mrs. F. M. Feffer. 2nd, John Rosen, Los Olivos Hotel, Phoenix. 3rd, R. W. Lewis, 6024 E. Hollyhock, Phoenix.
CLASS D. ANY OTHER DESERT PLANTS
1st and 2nd, Clifford M. Schroeder.

Continued in April Issue

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## RUMEX HYMENOSEPALUS

## POLYGONACEAE
Buckwheat Family

### Canaigre
### Wild Rhubarb
### Pie Dock
### Sour Dock

A striking, if not particularly beautiful plant, Canaigre (Sp., "sour cane") is found in sandy soil in the Upper and Lower Sonoran Zones at elevations lower than 6000 ft., usually along stream beds and roadsides. The common names indicate one of its early uses, as a substitute for rhubarb in pies, the petioles being used for this purpose. The Indians had many uses for this plant, the leaves cooked for greens, the roots as a cold or sore throat remedy (by the Hopis and Papagos), and the roots as a dye (by the Navajos).

**Rumex hymenosepalus** is a coarse perennial with stout fleshy stems 1 to 3 feet long, rising from a cluster of 2 to 12 dahlia-like tubers. Leaves are slightly succulent and are oblong or tapering. They may reach 2 feet in length and four inches in breadth, and are smooth-edged, not wavy as in Curly Dock **(Rumex crispus).**

The plant begins to grow in January

DGB photo

A three foot tall plant of *Rumex hymenosepalus* in flower

and blooms in February at lower elevations (June at highest elevations). Flowers are in a dense panicle, up to one foot in length. The six sepals are greenish, or pinkish-green, and in two series, the three outer sepals unchanging in size but persistent at the base of the three inner sepals. These latter enlarge and eventually enclose the three-angled fruits which are a delicate pink and rather more handsome than the flowers themselves.

It has been found that the dried tubers of **R. hymenosepalus** contain up to **45.8** per cent tannin, and are locally used for tanning leather. The very high tanning content has aroused interest in cultivation of the plant for commercial use, but attempts so far have been unsuccessful, due in part to the slow growth of **R. hymenosepalus**.

ARIZONA DISTRIBUTION:

Navajo, Coconino, and Mojave counties, south to Graham, Santa Cruz and Pima, common and conspicuous.

REFERENCES:

Dayton, W.A., Notes on Western Range Forbs

Kearney & Peebles, Arizona Flora

Parker, K.F., Arizona Ranch, Farm, and Garden Weeds

Shreve & Wiggins, Vegetation and Flora of the Sonoran Desert

DGB photo

Seven inch flower stalk of *Rumex hymenosepalus*

DGB photo

Note the large 'rhubarb' leaves and stems.

DGB photo

The 'dahlia-like roots of *Rumex hymneosepalus*

**SPRING WILD FLOWERS OF 1968 (Report No. 1)**

Because of the heavy winter rains in 1967-68, we have anticipated a spring flowering of more than ordinary vigor. For this reason we have asked several Garden members living in different parts of our Arizona Desert to record the flowers they see and thus give us a useful picture of 1968's spring. Other reports will be published in the April, May, and June-July issues of the Bulletin.

The following report of flowering through early February was made by Mrs. Barbara Hovatter. Her "area" is 45 miles south of Salome, in Yuma Co., at an elevation of 1000 feet.

We are on the southwest side of the highest peak of the Littlehorn Mountains. From December on we have had in flower: **Geraea canescens,** sunflower; **Dalea parryi; Salazaria mexicana,** paper-bag bush; **Anisacanthus thurberi,** desert honeysuckle; **Monoptilon belloides,** desert star; **Sphaeralcea ambigua,** desert mallow; **Allionia incarnata,** trailing four-o'clock; **Beloperone californica,** chuparosa; **Baileya multiradiata,** desert marigold; **Mentzelia involucrate,** sand blazing-star.

The first half of January, all of the above plus: **Cryptantha inaequata,** Darwin forget-me-not; **C. angustifolia,** narrow-leaved forget-me-not; **Parosela mollis,** silk dalea; **Lesquerella mollis,** beadpod; **Eriogonum inflatum,** desert trumpet. During the latter part of the month, we had in addition: **Erodium texanum,** heronbill; **Trichoptilium incisum,** yellowhead; **Ditaxis lanceolata; Haplopappus spinulosus,** spiny goldenbush; **Erodium cicutarium,** filaree; **Phacelia crenulata,** scorpionweed; **Janusia; Chaenactis fremontii,** Fremont pincushion; **Cercidium floridum,** blue palo verde; **Plantago insularis,** buck plantain; **Encelia farinosa,** brittlebush.

The foregoing continued into the first week of February, with the addition of: **Sisymbrium sp.,** London rocket; **Larrea divaricata,** creosote bush; **Chorizanthe corrugata; Amsinckia intermedia,** fiddleneck; **Lycium torreyi,** squawberry; Sand pepper grass.

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# GARDEN ACTIVITIES

## MARCH

| | | | |
|---|---|---|---|
| **Sun.** | **3rd** | LECTURE—Mexican Cacti | **3 P.M.** |
| 3rd - | 17th | *'Grand Canyon' photos by Ernest Braun from Sierra Club Exhibit | 9 A.M. - 5 P.M. |
| **Wed.** | **6th** | CLASSES—Deserts and their Plants | **3 & 8 P.M.** |
| **Thurs.** | **7th** | LECTURE—Arizona Cacti | **3 P.M.** |
| **Sat.** | **9th** | NATURE TRIP | **9 A.M.** |
| **Sun.** | **10th** | LECTURE—Arizona Wildflowers | **3 P.M.** |
| **Wed.** | **13th** | CLASSES—Desert Succulent Plants | **3 & 8 P.M.** |
| **Thurs.** | **14th** | LECTURE—Arizona Trees & Shrubs | **3 P.M.** |
| **Sun.** | **17th** | LECTURE—Arizona Birds & Animals | **3 P.M.** |
| **Wed.** | **20th** | CLASSES—Culture of Desert Succulent Plants | **3 & 8 P.M.** |
| **Thurs.** | **21st** | LECTURE—Arizona Scenics | **3 P.M.** |
| **Sat.** | **23rd** | *ARIZONA ORCHID SOCIETY SHOW | **9 A.M.** |
| **Sun.** | **24th** | *ARIZONA ORCHID SOCIETY SHOW | **9 A.M.** |
| **Sun.** | **24th** | LECTURE—Unusual Plants | **3 P.M.** |
| **Wed.** | **27th** | CLASSES—Identification of Desert Trees & Shrub | **3 & 8 P.M.** |
| **Thurs.** | **28th** | LECTURE—Cacti in Flower | **3 P.M.** |
| **Sun.** | **31st** | LECTURE—Mexican Cacti | **3 P.M.** |

* Extra scheduled activities for March

# SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XXII April, 1968 No. 4

The BIG Spring — 1968

REG MANNING

# SAGUAROLAND BULLETIN

Published and owned by the Arizona Cactus and Native Flora Society, sponsore of the Desert Botanical Garden of Arizona, P. O. Box 5415, Phoenix 85010. Saguaroland Bulletin attempts to promote the Garden and to provide information on the desert plants and their culture. Subscription $5.00 per year, the subscription including active membership in the Society and the Desert Botanical Garden. Issued 10 times a year.

W. HUBERT EARLE, Editor
LILLIAN DIVEN, Associate Editor

Volume XXII | April 1968 | No. 4



## Arizona Cactus and Native Flora Society

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## Desert Botanical Garden of Arizona

STAFF

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Maintenance and Bookstore.....Lynn Trainum
Student Horticulturist.....Lyle McGill


Cover: the blue Desert-Lupine *Lupinus sparsiflorus* borders the roadside and spreads out into the desert, March to May, depending upon elevation.

# Editor's Notes

INCLUDED with this Bulletin is a stamped, return-postcard ballot which we wish you would fill out and return by May 4th. The Annual Members' Meeting will be held Sunday, May 5th at 3 p.m. in order to elect the Executive Board. Incumbent Board Members Reg Manning and Charles Meig are up for re-election to three-year terms.

WE WISH to explain our not carrying in this issue the remaining list of winners and photos of the February Cactus Show. We felt you'd surely be interested in the terrific wildflower display now in our desert, and are devoting the entire issue to it.

SIX FIELD TRIPS were held in March for Garden members and members of our Desert Plants Classes. Five more will be held on April weekends until hot weather dries out the flowers. Do keep in touch with the office for the areas our field trips will visit each week.

WILDFLOWERS are blooming in great numbers and will continue at least until the third week in April in the foothills. Bee-line Highway (State Route 87) to Sunflower, the Apache Trail (State Route 88), all trails into the Superstition Wilderness Area, U.S. 60-70 from Apache Junctlon to Superior, Superior to Ray and Winkelman, Florence Junction to Oracle Junction (U.S. 80-89), all are good wildflower trips. Our staff and friends try to spot the best flowering areas — if you happen across an especially good location, please let us know.

COMMENT SHOULD be made on the wonderful response of our Garden Volunteers and the work now being done by them. In January many began to donate a half-day or full day weekly, and as the year progresses we expect to use the generously offered help of other volunteers. At present Maribel Pratt, Ruby Neumann, Helen Friedrichs, Wilma Baslet, Belle Cooper, Florentine Gebert, Wilma Carr, Brenda Beaulier, Elva Covert, Valerie Nelson, Mildred Hunt, Dorothy Reiff and Marie Steiger are all helping our staff in the Bookstore; Berenice Salaman, Lillian Mieg, Geraldine Carroll and Joy Lee Schroeder are doing typing in the office; Lela Turner, Verjean Houck and Sylvia Schoenfeld are doing general chores in the Auditorium and Library and also collecting seed; Isabelle Holt and Betty Schreiber are checking and cross-indexing books in our library; Sylvia Schoenfeld is also typing and making plant labels; Beverly and Warner Dodd filled over 500 packets of wildflower seeds for the Bookstore.

Hiram Pratt and Paul Neumann police the Garden paths and beds; Otto Friedrichs and Roy Salaman work in the Library; Stan Scott, Dave Squires, Lawrence Johnson and Karl Laubach weed cactus beds on Saturdays; Kenneth Carr has been making display cards and signs; Bernie Lewin photographs Garden plants; and Boy Scout Troop 116 has been doing its civic project by picking up glass and litter in the outer areas adjacent to the highways.

IT IS REALLY exciting to see all this dedicated activity, and our staff appreciates it greatly.

MISS LOU ELLA ARCHER, President of the Board of the Arizona Cactus and Native Flora Society, passed away on February 11, 1968, at the age of 78. She had always been a staunch supporter of the Garden, and aided it in its growth. Miss Archer became a member of the Garden in 1935, and with Mrs. Gertrude Webster planned the present Webster Auditorium, herbarium and other facilities. The building was completed in 1938.

Miss Archer furnished financial support in the construction of the Director's residence, built in 1952 and named the Archer House for her. She was a frequent visitor to the Garden, personally interested in its activities and projects under construction. Her acute criticisms and suggestions were of great value to the Garden during its early growing years.

The death of Miss Archer will be a loss to the Garden, but her planning will be in evidence in the ensuing years. Her family should be justly proud of her many civic interests, the Garden being one of her lasting favorites.

Bead-pod (*Lesquerella gordonii*) is an early spring yellow annual blanketing desert and hillside bearing bead-like pods along its stems.

# 1968 Is A Special Year

Yuma, Ajo, Nogales, Tucson, Florence, Superior, Phoenix, Wickenburg, Kingman, Parker and Ehrenberg border the southwest desert, now heavy with splashes and carpets of vivid wildflower colors.

Travellers, visitors and residents each year patiently and hopefully await a display such as the one now in evidence through our desert and foothills — the best since 1942. The years of 1952, 1958, and 1964 were quite good but this year is 'it'.

Sufficient moisture, cool days and scattered showers have joined forces to give support to an excellent wildflower display that started two weeks earlier than usual and will continue until late April.

Cacti are now heavy with bud and the magenta-colored hedgehogs began to burst out about the end of March, cerise beaver-tail prickly-pears are now blooming along the Colorado River and towards Wickenburg, staghorn chollas are ready to break out with yellow to burnt copper flowers if they get some heat, and saguaros, our giant cacti, will show about the last week of April with their waxy white night-blooming flowers.

The palo verde trees are in bud and will be covered with golden yellow flowers about the third week of April and continue until last of May, to be followed by the yellow honey mesquite trees and later the lavender-flowered ironwood trees.

The white, waxy-flowered Joshua Tree Yuccas have finished their heavy flowering northwest of Wickenburg, but will be followed by the Spanish Bayonet (**Yucca baccata**)—a few of them are now in flower in the McDowell and Superstition mountains east of Phoenix. The Ocotillos are heavy with red buds and with some heat, vivid orange-red tassels of flowers will be dangling from their green branches.

The desert floor and hillsides are now filled with Gold-poppies, yellow Brittle-Bush, Blue-Dicks, white Desert Chicory, yellow Fiddle-neck, heliotrope Phacelias, pink Desert Geranium (Alfilaria), violet Desert-sage (Chia), red Owl-clover, pink to orange Desert-mallow, blue Desert Lupines, lemon-yellow Desert-marigolds, white Prickly-poppies, orange Rock-pea, yellow Bead-pod, white to red Fairy-duster, pink Gilias, yellow Whispering-Bells, scarlet Bugler, white Phlox, red Humming-bird bush, yellow and white Ground-Daisies, and numerous other flower coming into bloom.

The roadsides fanning out of Phoenix to Wickenburg, Black Canyon, Superior, Florence, Apache Trail, Cave Creek, Carefree, Pinnacle Peak, Beeline to Saguaro Lake are bordered with blue Lupine, yellow Marigold and orange Desert mallows while other colorful flowers are creeping up the hillsides.

On a field trip into Peralta Canyon in mid-March one of our classes found 86 different flowers.

As this spring goes on, the peak flowering areas will be at progressively higher elevations, but lower desert spots are often worth re-visiting to see later-flowering annuals and perennials.

The Bulletin began to suspect, last winter, that the 1968 spring would be exceptional, and asked "reporters" from different desert areas to let us have their records of what's in bloom where. The following, although covering earlier spring, may help readers plan flower-sightseeing trips now and in the future, and should give a good picture of the lavish flowering possible in the desert springtime.

## WILDFLOWERS FROM WICKENBURG AREA
## Spring 1968

Last half of February, hills and washes. Elevations 2060-3000 feet variable cloudiness with scattered showers. Turpentine broom, poppies, phacelia, tree-tobacco, yellow evening primrose, lupine, fiddleneck, dock, wild tobacco bushes, desert marigolds, bladderpods.

Joshua forest, 2500 feet elevation, clear weather. Joshua blooms, **most profuse we have ever seen**, mountain verbena, datura.

March 3. Beautiful weather. Vulture Peak area. Blue dicks, firecracker penstemons, goatbeard, wild onion, Encelia frutescens, white encelia budded, ocotillo

White flowering desert-chicory (*Rafinesque neomexicana*) flowers through March and April.

Gold-poppy (*Eschscholtzia mexicana*) covers hillsides with its yellow to gold flowers

starting to bloom, fairy duster, jojoba in bloom, lupine, mallow, purplemat, poppies, phacelia, yellow Rock pea, fiddleneck, bladderpods.

Near top of Vulture Peak: Yellow mahonia in addition to all the above species. (We climbed up to the saddle.)

On top of Vulture Peak, 3658 feet elevation, yellow sweet pea bushes, blue dicks, encelia frutescens, fiddleneck. (3 of our party climbed to the peak).

Out Vulture Mine Road: Hummingbird bush.

Mockingbird Wash back of the John W. Smith place just east of the Phoenix highway. Cloudy day, March 6. The wash here is a botanist's paradise of tiny flowers, both in variety and profusion; tiny blues, whites, yellows, pinks, and purples. Only ones we identified were the pink flowers of the filaree. Dock, all flowered out, is everywhere. Also bladderpods. And here we found prickly cryptantha starting to bloom. We will report later on this area.

For a wonderful display of poppies, lupines and mallow, drive out Constellation Road, Vulture Mine Road, and Phoenix highway.

First half of March. Weather clear.

**Old Copper mine area** west of Constellation Road, 2 miles from town. Poppies, mallow, lupines, fiddleneck, melanpodium, fairy dusters, phacelias, goatsbeard, buckwheat, rock daisies, Mormon tea in bloom, brittlebush, buttercups, starleaf, prickly cryptantha, morning bride, evening primrose (Oenothera clavaeformis), turpentine broom, desert broom, marigolds, purplemat, filaree, chia, blue dicks, bladderpods.

**Mockingbird Wash**. Yellow desert dandelion, lupines, poppies, yellow evening primrose, phacelia, dock, prickly cryptantha, blue flax, chia, blue dicks, skunkleaf Polemonium (elevation 2100 feet and blooming in March), bladderpods.

**Phoenix Hwy. and McCarroll Road.** Wild onions, blue dicks, fairy dusters, phacelia, poppies (masses), brittlebush, lupines (masses).

**Constellation Road and Washes.** Yellow desert dandelion, brittlebush, goatsbeard, lupines, poppies (masses) buttercups, starleaf, phacelia, scarlet penstemon, fiddleneck, marigolds, bladderpods.

**Castle Hot Springs Road.** Masses of Lupines and mallow.

**Road to old Oro Grande Mine**, about 6 miles N.E. from Wickenburg. Masses of lupines.

**Vulture Mine Road.** Wild tobacco (white), marigolds, brittlebush (masses), hummingbird bush, phacelia (masses), lupines, poppies, bladderpods. Mallow just beginning to bloom.

**Old ore road from Vulture Mine to river.** Bladderpods, phacelia (masses), lupines, goatsbeard, poppies, fiddleneck, rock daisies, morning bride, brittlebush, blue dicks, owl clover, mallow, marigolds.

**Mining Road vicinity Mockingbird Wash.** (We live beside M. Wash) Phacelia, yellow desert dandelion, skunkleaf P., lupines, poppies, marigolds, bladderpods, scarlet penstemons, blue dicks, goatsbeard, morning bride, starleaf, buttercups, yellow primrose (low plant), prickly cryptantha, fiddleneck, chia, fairy duster, owl clover, loco weed, (white flowers), gold fields, and one fine plant of Mohave aster in bloom, and windmills (four o'clock). Also 3 kinds of white daisies, specias unknown.

**—Ida Smith**

## PERALTA CANYON
## March 24, 1968
(9 miles east of Apache Junction)

(This was a short trip without time for much more than "roadside botanizing," but as a rapid survey of the area it compares well with a more intensive look at the

Desert-Marigold (*Baileya multiradiata*) is a striking yellow blue especially when growing with desert-lupine.

identical area on the same date in 1965. In 1968, 42 species; in 1965, 47 species).

Desert marigold, **Baileya multiradiata**; Desert mallow, **Sphaeralcea ambigua**; **Erodium cicutarium,** Filaree; Fiddleneck, **Amsinckia intermedai;** Brittlebush, **Encelia farinosa** (at its peak); Creosote bush, **Larrea tridentata; Lupine** (several species); Ocotillo, **Fouqueria splendens** (surprisingly early); Desert sunflower, **Geraea canescens**; Prickly poppy, **Argemone platyceras**; Bluedicks, **Brodiaea capitata** (just fading); Spurge, **Euphorbia spp.** (several); Dwarf daisy, **Montpilon bellioides** (at its peak); Indian wheat, **Plantago insularis**; Bead-pod, **Lesquerella gordonii**; Owlclover, **Orthocarpus purpurascens**; Phacelia, **Phacelia creulata;** Goldfields, **Baeria chrysostoma**; Tackstem, **Calycoseris wrightii; Cryptantha pterocarya**; Popcorn Flower, **Plagiobothrys arizonicus**; Mormon Tea, **Ephedra trifurca; Rafinesquia neomexicana; Lotus humilis; Lotus rigidus**; Bur-sage, **Franseria deltoidia**; Pincushion, **Chaenactis stevioides**; Pink Buckwheat, **Eriogonum sp.**; Desert Poppy, **Eschscholtzia mexicana;** White Gilia, **Gilia sp.**; Blue Gilia, **Gilia sp.**; Burroweed, pink-lavender composite bush. **Amsonia hirtella** (handsome, bushy, starry white flowers); white bead-pod, **Lesque rella purperea**; a half-inch flowered hibiscus; large Evening Primrose, **Oenothera sp.; Boerhavia sp.**; Yellow Bells, **Emmenanthe penduliflora**. —L.D.

## REPORT FROM LITTLEHORN AREA

## Wildflowers in Bloom Feb. 8 to March 8, 1968

The past month we've had several showers and colder nights here on the southwest side of the Littlehorns, elevation about 2500 feet. All of the previously mentioned flowers(**Saguaroland Bulletin**, March, 1968, page 36), are still in bloom, plus many more, although most are still not in their prime. The area is roughly 100 miles west of Phoenix.

Th broad-nutted comb-bur (**Pectocarya platycarpa**) forms a grassy mat to set off the colors of all the blossoms. Blooming are: two more blazing stars, Venus (**Mentzelia nitens**) and the less attractive Yellow comet (**M. affinis**); the pretty White Tackstem (**Calycoseris wrightii**) and the Yellow (**C. parryi**); their cousin the White Desert Dandelion (**Nemoseris neomexicana**); the very odd Indian Root (**Aristolochia watsoni**) on which the beautiful blue swallowtail butterfly lays her eggs, that hatch into attractive larvaie; three primroses so far, Long-capsuled (**Oeonthera chamaenerioides**), Woody bottle-washer (**O. decorticans desertorum**) and the lovely large yellow desert primrose (**O. primaveris**); of the poppies: Prickly (**Argemone platyceras**) which is found blooming somewhere every month of the year; Desert gold poppy (**Eschscholtzia glyptosperma**), and the less conspicuous little gold poppy (**E. minutiflora**); mustards, both white (**Descurania brachycarpon**) and Yellow tansy (**D. pinnata**) and the tiny white (**Draba cuneifolia**) Nutt. var. **integrifolia**); Desert tobacco (**Nicotiana trigonophylla**); Desert poinsettia (**Euphorbia eriatha**); Sawtoothed ditaxis (**Ditaxis serrata**) and Shrubby coldenia (**Coldenia canescens**) of the spurges; Purplemat (**Nama demissum**); Chia (**Salvia columbariae**); Desert lavender (**Hyptis Emoryi**); Arizona filago (**Filago arizonica**); Tooth-leaved gilia (**Gilia leptomeria**) and Bristly gilia (**Gilia setosissima**) of the phloxes; Rcok hibiscus (**Hibiscus denudatus**), an interesting flower; Desert hyacinth (**Brodiaea capitata**) and Ajo lily (**Hesperocallis undulata**); buckwheats: Rigid spiny-herb (**Chorizanthe rigida**), Bailey buckwheat (**E. baileyi**), Yellow buckwheat (**E. brachyanthum**), and Brittle spiny-flower (**Chorizanthe brevicornu**); Bucknut (**Simmondsia chinensis**); Desert mistletoe (**Phoredendron californicum**) has its yellow blossoms along with its

Gold-poppy (*Eschscholtzia mexicana*) forms large golden carpets, also can be seen the Ground-daisies and Lupine

little shiny bright red berries; and as yet of the cacti, only the Beavertail (**Opuntia basilaris**) has bloomed out here, although the Hedgehogs are budded. It's raining again now, which will prolong the life of plants that had started to dry up.

**—B. Hovatter**

## GALIURO MOUNTAINS
### February 27

Flowers seen in the Galiuros, at an elevation of 3500 feet. The Galiuros are on the east side of the San Pedro River, across from San Manuel, which is itself some forty-five miles northeast of Tucson.

Lesquerella, abundant; California poppy, common in rockly places; Brodiaea, abundant; Lycium, medium to sparse; Phacelia; Lotus; Oenothera, yellow, common; Calliandra, common; Mustard (**streptanthus caulanthus**) common; **Erodium cicutarium**, abundant; orange Sphaeralcea, scarce; **Phacelia crenulata**, common under trees; a pink mustard, **Descurania sp.; Anemone tubiflora**, scarce; fringe-pod mustard, **Dithyria wislizenia;** desert tobacco, **Nicotiana trigonophylla**, sparse; rock daisy, **Monoptilon bellioides**, abundant; **Rafinesquia neomexicana**, only one seen; **Salvia columbariae**, starting; lupine spp.; **Pectocaria sp.; Amsinckia tesselata**, only a few.

—JHW

Small golden flowers of Fiddle-neck (*Amsinkia intermedia*) form a fiddle-like flower stalk from February to April.

Desert-Mallow, Globe-Mallow (*Sphaeralcia ambiqua)* is one of the southwest desert's outstanding plants especially when it borders the roadways with its bring orange flowers.

Gray flannel-like leafed Brittle-Bush (*Encelia farinosa*) will cover rocky hillsides with it bright yellow flowers March through April.

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## GARDEN ACTIVITIES

### APRIL

| | | | |
|---|---|---|---|
| Wed. | 3rd | CLASSES—Culture of Desert Trees & Shrubs | 3 & 8 P.M. |
| Thurs. | 4th | LECTURE—Arizona Cacti | 3 P.M. |
| Sat. | 6th | NATURE TRIP | 9 A.M. |
| Sun. | 7th | LECTURE—Arizona Wildflowers | 3 P.M. |
| Wed. | 10th | DESERT FIELD TRIP for Afternoon Class | 9 A.M. |
| Thurs. | 11th | LECTURE—Arizona Trees & Shrubs | 3 P.M. |
| Sat. | 13th | DESERT FIELD TRIP for Evening Class | 9 A.M. |
| Sun. | 14th | LECTURE—Arizona Birds & Animals | 3 P.M. |
| Thurs. | 18th | LECTURE—Arizona Scenics | 3 P.M. |
| Sun. | 21st | LECTURE—Unusual Plants | 3 P.M. |
| Thurs. | 25th | LECTURE—Cacti in Flower | 3 P.M. |
| Sun. | 28th | LECTURE—Mexican Cacti | 3 P.M. |

### MAY

| | | | |
|---|---|---|---|
| Sun. | 5th | Member's Annual Meeting | 3 P.M. |
| Sat. | 11th | NATURE TRIP | 8 A.M. |

# SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XXII May, 1968 No.5

Dried 'blazing-star' branches in winning arrangement by Mrs. E. H. Schrieber, Mesa, Arizona.

REG MANNING

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W. HUBERT EARLE, Editor
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Volume XXII | May, 1968 | No. 5



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Garden Open Daily 9 A.M. - 5 P.M. Including Holidays

# YUCCA AUSTRALIS (Englem.) Trelease — Fam. Liliaceae

**Yucca australis,** a large arborescent plant, is multiple branched from a large thick trunk. Rough bark covers the main stem and lower portions of the branches. In a native state it attains a height of ten or more meters (30 to 35 feet). The thick, medium-length leaves are green with stout, pointed tips. They are spreading, rigid, and measure about 30 cm in length and 25 mm. in width. Leaf surface is smooth, the margins are not denticulate, but sparingly and corasely filiferous. The inflorescence is long, pendent on an arched peduncle,, and hangs straight down. It is a long, narrow panicle with pendent branches bearing creamy-white flowers. These are small with short styles and six lobed stigmas. Length of the panicle may reach 1.8 meters (6 feet). Fruit is of the baccate type, being fleshy and indehiscent and oblong in shape. Seeds are dark grey to dull black and quite thick, measuring to 8 mm. in thickness.

Distribution of **Yucca australis** extends from southern Coahuila, central Nuevo Leon, and southwestern Tamaulipas through most of San Luis Potosi south to Queretaro, Mexico. In a cultivated state its range is extended.

This species is similar to the arborescent **Yucca brevifolia** in form and size, but its rate of growth is much greater than that of the Joshua tree. Under optimum conditions a mature flowering plant can be grown in little more than twenty years. As a landscape item in a desert garden, **Yucca australis** would serve as a specimen or tall canopy plant rising above understory desert plants. Its long pendent inflorescence presents an appearance that is unique among species of yuccas.

Seed has a long-term viability and germination percent of fresh seed is high. Cultural requirements are: a well-drained soil, supplemental water during periods of drought, and protection from rodents during seedling and juvenile stages. It thrives in full sun in any exposure, but lower limits of temperature tolerance are not known.

References:

Standley, P. C.,
Trees and Shrubs of Mexico.

Trelease, W.,
The Yucceae.

DBG photo

*Yucca australis* photographed 11 km. south of Saltillo, Coahuila, Mexico.

# 21ST ANNUAL CACTUS SHOW
# TROPHY WINNERS (Continued from the March BULLETIN)

DBG photo

Handsome desert-driftwood on a polished metal base was an award-winning entry by Mrs. Camille Minehart in the 21st Cactus Sshow.

SECTION IV. ARRANGEMENTS

CLASS A. DISH GARDENS, planted (accessories permitted)

Div. 1. CACTI

1st, Mrs. Arthur Holt, 2nd, Mrs. Carl Dodd, 2605 W. Van Buren, Phoenix. 3rd, Mrs. Lillian Lugibihl. 4th, Mrs. Valerie Nelson, 7840 E. Palm Lane, Scottsdale.

Div. 2. OTHER SUCCULENTS

1st, Mrs. Arthur Holt. 2nd, John B. Hales. 3rd. Mrs. Louise Hartman, 501 W. Vermont Ave., Phoenix. 4th, Mrs. Margaret Meyer, 502 W. Vermont, Phoenix.

Div. 3. CACTI & OTHER SUCCULENTS

1st, Clifford M. Schroeder. 2nd, Mrs. F. M. Feffer. 3rd. Mrs. Ted Chambers, Rt. 3, Apache Junction, 4th, Mrs. Arthur Holt.

CLASS B. STRAWBERRY JARS (Cacti and-or other succulents)

1st Mrs. Margaret Meyer. 2nd, Karl Laubach, 2922 E. Moreland, Phoenix, 3rd. Mrs. Sylvia Schoenfeld. 4th, Mrs. Russell Slingerland. 4th, Mrs. R. G. Buzzard, 320 Broadmor, Tempe.

CLASS C. PATIO PLANTERS

1st, Virginia Carnahan, 505 N. 38th Ave., Phoenix. 2nd, 3rd and 4th, John B. Hales. 4th, Mrs. Emma Oscarson, 511 N. 38th Ave., Phoenix, 4th, Mrs. Arthur Holt. 4th, Henry C. Triesler, Jr. Subdivision, Hanging Basket: 1st Mrs. F. M. Feffer.

CLASS D. CENTERPIECES (Accessories permitted)

Div. 1. CACTI

1st. Pat Partridge, 2722 Zuni, Glendale. 2nd, Mrs. Ted Chambers, Route 3, Apache Junction. 3rd, Mrs. Lela Turner.

Div. 2. OTHER SUCCULENTS

1st, Laura Nixon, 1541 E. Willetta St., Phoenix. 2nd, Mrs. Lela Turner. 3rd, Mrs. Arthur Holt.

Div. 3. CACTI & OTHER SUCCULENTS

1st. Mrs. Lela Turner. 2nd, Nancy Lockard, 2724 Zuni, Glendale. 3rd, Mrs. Arthur Holt.

Div. 4. NATURAL, DRIED DESERT MATERIAL

1st, Camille Minehart, Route No. 2, Box 279, Apache Junction. 2nd. Mrs. Lillian Lugibihl, 811 W. Howe, Tempe. 3rd, Mrs. Lela Turner. 4th, Mrs. Valerie Nelson, 7840 E. Palm Lane, Scottsdale.

Div. 5. MEXICAN INFLUENCE

1st, J. Evans, 811 W. Howe Street, Tempe. 2nd, Camille Minehart. 3rd, Mrs. Arthur Holt.

Div. 6. AMERICAN INDIAN INFLUENCE

1st, Mrs. Lela Turner.

Div. 7 ANY OTHER

1st, Mrs. Arthur Holt.

CLASS E. ARRANGEMENTS ON OR AGAINST THE WALL (Accessories permitted)

Div. 1. CACTI

1st, Mrs. L. Turner. 2nd, Mrs. Arthur Holt.

Div. 2. OTHER SUCCULENTS

1st, Pat Partridge. 2nd, Mrs. Lela Turner. 3rd, Nancy Lockard. 4th, Mrs. Arthur Holt.

Div. 3. CACTI & OTHER SUCCULENTS

1st, Mrs. J. Nuber, 1908 N. 22nd Place, Phoenix. 2nd, Nancy Lockard. 3rd, Mrs. Valerie Nelson.

Div. 4. NATURAL, DRIED DESERT MATERIAL

1st, Mrs. Ted Chambers. 2nd, Mrs. Lela Turner. 3rd, Pat Partridge. 4th, Mrs. H. L. Inscho, 5526 E. Cheery Lynn, Phoenix.

Div. 5. MEXICAN INFLUENCE

1st, Mrs. J. Nuber. 2nd, Pat Partridge. 3rd, Mrs. Franklin Girard, 2929 E. Main Street, Space 117A, Mesa.

Div. 6. AMERICAN INDIAN INFLUENCE

1st, Mrs. J. Nuber. 2nd, Mrs. Arthur Holt.

Div. 7. ANY OTHER

1st. Mrs. Ted Chambers. 2nd, Laura Nixon.

CLASS F. CORSAGES

Div. 2. OTHER SUCCULENTS

2nd, Pat Partridge.

CLASS G. BUTTON GARDENS

Div. 1. CACTI

1st, Mrs. Franklin Girard.

Div. 2. OTHER SUCCULENTS

1st, Mrs. J. Nuber. 2nd, Elva Covert, 6448 E. Pebble Dr., Mesa.

Div. 3. CACTI & OTHER SUCCULENTS
1st, Mrs. L. Turner. 2nd, Mrs. Franklin Girard. 3rd, Mrs. Ida Spreen, 6448 E. Pebble Drive, Mesa.
Div. 4. NATURAL, DRIED DESERT MATERIAL
1st, Mrs. L. Turner. 2nd, Sandra Hovatter, Salome. 3rd, Mrs. E. H. Schrieber, 5233 E. Covina, Mesa. 4th, Mrs. Valerie Nelson.
Div. 5. MEXICAN INFLUENCE
1st. Mrs. J. Nuber. 2nd, Bonnie Rodriguez, 621 W. Howe, Tempe.
Div. 6. AMERICAN INDIAN INFLUENCE
1st, Mrs. Franklin Girard. 2nd, Mrs. Valerie Nelson.
Div. 7. ANY OTHER
1st. Mrs. L. Turner. 2nd, Sandra Hovatter. 3rd, Mrs. Valerie Nelson.

CLASS H. MINIATURE ARRANGEMENTS
Div. 1. CACTI
1st. Mrs. L. Turner.
Div. 3. CACTI & OTHER SUCCULENTS
1st. Clifford M. Schroeder. 2nd, Mrs. Valerie Nelson.
Div. 4. NATURAL, DRIED DESERT MATERIAL
1st, Mrs. Edw. Comins. 2nd, Mrs. Ted Chambers. 3rd, Mrs. Lela Turner. 4th, Mrs. Franklin Girard and Mrs. J. Nuber.
Div. 5 MEXICAN INFLUENCE
1st, Mrs. E. H. Schrieber. 2nd, Mrs. Cleo Schliep, 5217 E. Boise, Mesa. 3rd, Carol Doddroe, 2622 Osage, Glendale.
Div. 6. AMERICAN INDIAN INFLUENCE
1st, Mrs. J. Nuber. 2nd, Carol Doddroe.

CLASS J. SMALL ARRANGEMENTS. — 5″ to 8″ high.
Div. 1. CACTI
1st, Pat Partridge.
Div. 2. OTHER SUCCULENTS
1st, Mrs. L. Turner.
Div. 4. NATURAL, DRIED DESERT MATERIAL
1st, Mrs. L. Turner. 2nd, Mrs. Franklin Girard. 3rd, Mrs. E. H. Schrieber.
Div. 5. MEXICAN INFLUENCE
1st, Mrs. Valerie Nelson.
Div. 7 ANY OTHER
1st, Mrs. L. Turner.
SECTION IV.

CLASS K. TERRARIUM
1st. Nancy B. McMahon, 6618 Jackrabbit Road, Scottsdale. 2nd, Mrs. Russell Slingerland, 8503 E. Heatherbrae Dr., Scottdale. 3rd, Mrs. Hope Bailey, 71 N. 21st Pl., Phoenix.
SECTION V. ARTS

CLASS A. BLACK & WHITE PHOTOGRAPHS
Close-ups
1st, Miss Agnes M. Holst, 1902 E. Willetta St., Phoenix. 2nd, Miss Agnes M. Holst. 3rd, L. E. Woodruff, 705 E. Granada Road, Phoenix. 4th, Miss Agnes M. Holst. 5th, Mrs. Edith M. Royky, 810 9th, Apt. 8, Sioux City, Iowa.

(Continued on Page 56)

# ASPECTS OF THE DESERT

This Hopi village of northeastern Arizona is in the desert, yet it is at times isolated by heavy winter snows. Elevation is 6225 feet, and the surrounding desert is the high-plateau type with scant vegetation and many dry washes. Walpi has been occupied by the Hopis since 1680.

DBG photo

Dried milo maizeheads, arranged by Mrs. Ted Chambers for the Show.

DBG photo

Mrs. J. Nuber combined agaves leaves and a crested optuntia pad here.

Landscapes

1st, L. E. Woodruff. 2nd, Hobart Pribbenow, 3405 E. Sheridan, Phoenix. 3rd, Hobart Pribbenow. 4th, Hobart Pribbenow. 5th, L. E. Woodruff.

CLASS B. COLORED PHOTOGRAPHS

Close-ups

1st. L. E. Woodruff. 2nd, Mr. Bernie Lewin, 3rd, L. E. Woodruff. 4th, L. E. Woodruff.

Landscapes

1st, L. E. Woodruff, 2nd, Mrs. Edith M. Royky. 3rd, Mr. Bill Holloway, 1812 Crittenden Lane, Phoenix. 4th, Mrs. Edith M. Royky. 5th, Mrs. Edith M. Royky.

Div. 2. TRANSPARENCIES

Close-ups

1st, Miss Agnes Holst. 2nd, Miss Agnes Holst, 3rd, Beth Swanson, 6631 N. 12th Place, Phoenix. 4th, John H. Walter, 10568 Oakmont Drive, Sun City, Ariz. 5th, Miss Agnes Holst.

Landscapes

1st. Genevieve Evans. 2nd, Mr. John Matthes, 520 S. Alma School Road, Box 3, Mesa. 3rd, Mr. Bill Holloway. 4th, Mr. Bill Holloway. 5th, Mrs. Lorraine Matthes, 530 S. Alma School Road, Mesa.

Flora & Fauna

1st, Laurie Kriz, Rt. 1, Box 1705, Apache Jct. 2nd, Laurie Kriz. 3rd, Laurie Kriz. 4th, Laurie Kriz. 5th, Mrs. Lorraine Matthes.

Sunset

1st, L. E. Woodruff. 2nd, L. E. Woodruff. 3rd, Clifford M. Schroeder

CLASS C. OIL PAINTINGS

Flowers

1st, Vallori, 415 W. Dobbins Road, Phoenix. 2nd, Mr. Donald Denton, 6402 N 85th St., Scottsdale. 3rd, Vallori.

Landscape

1st. Mrs. Ruth Noland, 4211 E. Roma, Phoenix. 2nd, Mrs. Adrian Roscoe, Rt. 1, Box 1680, Apache Junction. 3rd, Mr. Donald Denton.

CLASS D. WATERCOLOR PAINTINGS

Flowers

1st, Mrs. Barbara Hovatter, Salome, 2nd, Mrs. Barbara Hovatter. 3rd, Mrs. Barbara Hovatter.

Landscape

1st. Mrs. Adrian Roscoe. 2nd, Mrs. Elaine Retherford, 5610 N. Cameldale Way, Scottsdale. 3rd, Mrs. M. Meredith, 4017 E. Coolidge St., Phoenix.

CLASS E. DRAWINGS (ink, pencil, chalk)

1st, Mrs. Barbara Hovatter. 2nd, Mrs. Barbara Hovatter. 3rd, Mrs. Barbara Hovatter.

CLASS F. ANY OTHER MEDIUM

1st, Miss Regina Harris, 46 E. Monterey Way, Phoenix, 2nd, Doris Griswold, Box 115H, Black Canyon Stage, Phoenix. 3rd, Barbara Hovatter. 4th, Barbara Hovatter.

CLASS G. NATURAL DESERT WOODS

1st. Camille Minehart. 2nd, Mrs. Emma Oscarson, 5711 N. 38th Ave., Phoenix. 3rd, Mrs. A. Leth, Box 110, Black Canyon Stage, New River.

SECTION VI EDUCATIONAL EXHIBITS

1st, Clifford M. Schroeder. 2nd, Karl Laubauch, 2922 E. Moreland, Phoenix. 3rd, L. Bremer.

SECTION VII JUNIOR CLASS

1st. Gloria Pierson, 325 W. Willetta, Phoenix. Harold Pierson, 325 W. Willetta, Phoenix, Cathy Scott, 7247 N. Black Rock Trail, Paradise Valley. Mark Nelson, 7840 E. Palm Lane, Scottsdale. Allison Schoenfeld, 2007 E. Rancho Drive, Phoenix.

2nd, Kathy Scott. Patrick Nelson, 7840 E. Palm Lane, Scottsdale.
3rd, Mark Nelson. Patrick Nelson.

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## GARDEN ACTIVITIES

### MAY

| | | | |
|---|---|---|---|
| **Sun.** | **5th** | MEMBER'S ANNUAL MEETING | **3 P.M.** |
| **Tues.** | **7th** | CACTOMANIAC'S POT LUCK DINNER | **6:30 P.M.** |
| **Sat.** | **11th** | NATURE TRIP — Pinal Ranch | **8 A.M.** |

# MEMBER'S GARDEN—VII

Mrs. Barbara Hovatter lives in a twentieth-century mining camp, which looks nothing at all like the earth-scarred, grim old-time camps, as you can easily see. The location is in the Littlehorn Mountains, about 40 miles south of Salome, at an elevation of 2500 feet.

An artist, a serious amateur botanist, Mrs. Hovatter is also mother of three girls. All this contributed to her designing this handsome, very-low-maintenance desert garden. Raised, circular beds edged with rock, and rock mulch, help keep down weeds, and a long fence of saguaro ribs helps keep out deer and rabbits. There is no monotony in the repeated circle beds—careful placement, varieties of rocks and changes in size. Palo verdes and ironwood give light shade and verticle lines.

Mrs. Hovatter is an assiduous collector of the seeds of native annuals, and she has a border five by **four hundred** feet around the garden where come next spring, they will flower and add to the beauty of this imaginatively planned garden.

## A New Mammillaria

About ten years ago we made a trip into southern Mexico: Dr. George Lindsay, Dr. Reid Moran and myself. It was on that occasion that the ever-present hope of finding "something new" was realized.

Our base of operations was Oaxaca where we stayed with Mrs. Luisa Martinez at her Swiss-style pension. On that particular day we covered territory south and east of Mitla, at about 6000 feet elevation. The road was hardly deserving of such a name, but we managed. Near the timberline the other two were intrigued by a profusion of orchids which grew on the ground, while I looked for the usual cactus. Hernando Sanchez Mejorada had joined us in Mexico City and he drifted along with me downhill, while we left the car with the others. **Mammillaria mitlaensis** was most profuse, but in an outcropping of lava there was suddenly the "something new". It appeared to be a rather small, flat mammillaria with silken white hair, very shiny, growing between the boulders. No one seemed to know the plant and later in Mexico City no one did, either. We collected about six specimens, which, as I remember, was about all we found on that side of the road, and never looked further, as the other two were ready to move on.

Five plants were left in Mexico and one I brought back with me, the latter flowering a few months later in my garden with a very large blossom and a one-inch-long tube, more like a **Dolichothele.** The color of the flower, though, was bright red. This was photographed in color.

Later, on request, I sent the picture to Mexico City and that was the end of the whole project. Two years ago, Mr. Earle, myself, Kraehenbuhl, Krainz, and wives stopped over, but no specimens were found alive — and neither could the picture be found again. This was the end of **"Mammillaria Miegii"** and my dream of immortality, or so I thought.

But matters did not rest there. Yesterday I received a postcard from Felix Kraehenbuhl who had flown from Switzerland to Oaxaca and who had received directions as to location from me, and he reported that he found the plant again and collected a few. They are said to be in bud. Now I can only hope that he will send me one or two, or that they see to it that there will be seed later on. I am also waiting for the slides he took. I hope he will, when describing the plant, keep the exact location unmentioned. This I think is important, for the good reason that the plant may have a chance to survive if he does.

**—C. E. Mieg**

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# WILDFLOWER REPORTS

## (1) From the Hereford Area

Hereford is in southeastern Arizona, 35 miles west of Douglas and only a few miles from the Mexican border. The elevation is 4100 feet. It lies between the Mule Mountains (to 6500 feet) and the Huachucas (to 8400 feet). This report covers the month of March and the first week of April.

From along the San Pedro River to the foot of mountains: **Rumex hymenosepalus**, dock or canaigre; **Argemone platyceras,** pricklepoppy — just beginning; **Astragalus mollissimus**, woolly loco — the country is covered with it, more than has been in 35 years; **Malacothrys glabrata**, desert dandelion; **Oenothera runcinata**, creeping primrose; **Allonia incarnata**, trailing four-o'clock; **Abronia villosa**, sand

verbena — all over, near Sulphur Springs and Douglas; **Baeria chrysostoma,** goldfields; **Physalis fendleri,** ground cherry; **Eriogonum deflexum,** skeleton weed; **Brodiaea capitata**, desert hyacinth; **Plantago hirtella**, Indian wheat; **Microseris linearifolia,** silver puff; **Phlox nana,** pink phlox; **Gilia longiflora,** blue gilia.

From foot of mountains to about 5000 feet: **Calliandra eriophylla,** fairy-duster; **Astragalus mollissimus**, woolly loco; **Erigeron divergens**, fleabane; **Monoptilon bellioides**, desertstar; **Cirsium neomexicanum**, New Mexico thistle — in bud; **Lupinus palmeri,** Palmer lupine; **Tecoma stans,** trumpet bush; **Allium palmeri,** wild onion; **Monarda menthaefolia,** horsemint; **Linum lewisii,** blue flax; **Mimulus guttatus,** monkeyflower; **Eriogonum wrightii,** buckwheat bush; oak and mazanita.

**—Nona B. Mott**

## (2) From the Littlehorn Area

From March 8 to April 8 we've had no rain in this area. Due to cold weather again, with the dry conditions, some species died without blooming; some did not even appear this year. Most of our flowers have already seeded, although some late starters are still in flower.

In bloom during the past month are: **Brodiaea capitata,** desert hyacinth; **Lupinus arizonicus** Wats., pink lupine; **Cassia bauhiniodes,** desert senna; **Eriastrum diffusum,** cream gilia; **Oenothera pallidula,** pale yellow primrose; **Nemacladus rigidus rubescens,** rigid-stemmed thread plant; **Porophyllum gracile,** odora; **Delphinium scaposum,** desert larkspur; **Psilostrophe cooperi,** paper daisy; **Malocothrix sonchoides,** yellow saucer; **Erigeron concinnus,** tiny fleabane; **Apium leptophyllum,** wild celery; **Aniscoma acaulis,** scale bud; **Malocothrix californica glabrata,** yellow desert dandelion; **Malocothrix coulteri,** snake's head; **Eriogonum baileyi,** Bailey buckwheat; **Eriogonum pusillum,** yellow turban; **Antirrhinum filipes,** twining snapdragon; **Calochortus flexuosus,** straggling mariposa; **Orobanche ludoviciana**, broomrape; **Fouquieria splendens**, ocotillo; **Lotus tomentellus,** hairy lotus; **Krameria parvifolia,** little-leaved ratany; **Physalis crassifolia,** thick-leaved ground cherry; **Solanum rostratum**, buffalo-bur; **Mentzelia albicaulis**, small-flowered blazing star; **Malva parviflora,** cheeseweed; **Funastrum heterophyllum,** climbing milkweed; **Cuscuta indecora,** dodder; **Mohavea confertiflora,** ghost flower; **Simmondsia chinensis**, bucknut; **Eriogonum gracillimum**, slender-stemmed buckwheat; **Erigeron divergens,** spreading fleabane; **Franseria dumosa,** burrobush; **Hymenoclea salsola,** cheesebush; **Zinnia pumila,** wild zinnia; **Dyssodia thurberi,** thurber dyssodia; **Dyssodia porophylloides**, San Felipe dyssodia; **Polygonum argyrocoleon** Steud., silver sheath knotweed; **Sida physocalyx** Gray, tuberous sida; lovely globe mallows in white, cream, pale pink, rose-pink, cerise-rose, rose-red and dull red; of cacti, **Mammillaria microcarpa,** pincushion; **Cylindropuntia echinocarpa,** silver cholla; also staghorn and hedgehogs.

**—B. Hovatter**

# SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XXII June-July, 1968 No. 6

Grille between pillars of new Archer House carport.

REG MANNING

# SAGUAROLAND BULLETIN

Published and owned by the Arizona Cactus and Native Flora Society, sponsore of the Desert Botanical Garden of Arizona, P. O. Box 5415, Phoenix 85010. Saguaroland Bulletin attempts to promote the Garden and to provide information on the desert plants and their culture. Subscription $5.00 per year, the subscription including active membership in the Society and the Desert Botanical Garden. Issued 10 times a year.

W. HUBERT EARLE, Editor
LILLIAN DIVEN, Associate Editor

Vol. XXII | June-July, 1968 | No. 6



## Arizona Cactus and Native Flora Society

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## Desert Botanical Garden of Arizona

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Garden Open Daily 9 A.M. - 5 P.M. Including Holidays

# Editor's Notes

**1967-68 was** another "in the black" year, i.e., it did not "see red" but showed a substantial earning. Income was $9,000 over anticipated budget, whereas expenditures were $3,500 higher.

Nearly all moneys in the savings funds were withdrawn for the large summer building program, as show in the Financial Statement (page 65) under Capital Improvements. A loan of $5,000 was requested from Valley National Bank for additional improvements to the Auditorium Building, and granted. Half of the loan has been repaid, and the remainder will soon be erased.

**Bookstore sales** were the highest to date. The difference between the cost of purchases and sales revenue gave us another comfortable margin for other operations within the Garden.

**Wholesale** of cacti seeds really dropped off, because of the underselling of commercial seed collectors. If we cannot sell at a moderate profit, we'll withdraw from this market for a few years.

**Voluntary admissions** were higher than last year, and should reach about $12,500 this year.

**Endowment** earnings were about $5,000 higher than usual, which enabled us to more than expand our building program last summer.

**Held-in-trust** funds have been set up for the Lois Porter Earle Memorial and Hiram Pratt Memorial in honor of two outstanding members who unexpectedly passed away early this year. All contributors and Garden Members have recently been sent a list of the various suggestions for the form one memorial should take, and it is planned to erect the memorial in the Garden this summer.

**"Cacti of the Southwest"** — 5,500 copies were printed in 1963. 5000 copies were reprinted in 1966. Demand continues, and so another 5,000 copies will have to be reprinted this summer.

Over 150,000 copies of **"Cactus and Succulents and How to Grow Them"**, by Scott Haselton have been printed since 1945. The Garden bought the remaining unsold copies and the publishing rights from Mr. Haselton in 1966. Recently, the Garden has reprinted this booklet and "dressed it up" with a stiff green cover. It will carry "Desert Botanical Garden Science Bulletin No. 5" on its cover.

**"YOU LIKE THE DESERT"** is a 5½"x8½" single-page yellow-colored brochure that the Garden has been distributing to hotels, motels, auto clubs, conventions, Chambers of Commerce and individuals throughout the country for the past ten years. It was designed by our Board Member Reg Manning in 1957 and over 220,000 have been printed in the past.

This is being redesigned into a single-fold 8"x9" brochure of several colors so that it will fit into a long envelope and also into the large display racks in hotels, motels, etc. The old yellow brochures cost one-third cent each, the new and larger brochure will cost three-quarters of a cent each but will contain photographs of the Garden and also a map as to how to locate the Garden in the Phonix area.

# Reports of Annual Meetings

## MEMBERS' ANNUAL MEETING

The Meeting was held Sunday, May 5th, with a good attendance. Vice President John Rhuart presided along with Mrs. Angela Bool, Secretary.

The large number of mailed - in votes were tallied by Miss Eleanor B. Sloan and Mrs. F. M. Feffer, Sr. Incumbent Board Members Reg Manning and Charled Mieg were re-elected. Eight write - ins were recorded on the count.

This was the first Members' Meeting, and the first group, to hold a meeting in our new library building, and all were impressed with it.

## THIRTY-THIRD ANNUAL BOARD MEETING

Twenty-two (board members and their wives) met at the Concho Club on May 2nd, with Chairman John Eversole presiding. Secretary Angela Bool reported on the last meeting and on the results of the annual Members' Meeting. Mr. Manning and Mr. Mieg were re-elected to the Executive Board for three-year terms.

John Rhuart was elected President and Edward Burrall was elected Vice President. Re-elected to office were: Angela Bool, Secretary; Tom Goodnight, Treasurer. Mrs. Frank M. Feffer, Sr. was elected to fill the unexpired term of the late Miss Lou Ella Archer.

A report on the completion of the new library was given by its architect, Les Mahoney. The Board extended thanks to him for his architectural services.

Financial report again is in the black. It was given by the Director, as shown on page 65. Expenditures reached the highest in the history of the Garden.

The Board went on record extending its sympathy and condolences to the families of the following who passed away during the last year: Miss Lou Ella Archer, Lois Porter Earle, Mr. Hiram Pratt, Mrs. E. G. Stocks and Mrs. Neil T. Van Ness.

A report on the Lois Porter Earle Memorial Fund, held in trust by the Garden, was given by Mrs. Lillian Mieg. She and Charles Mieg were appointed by the Board to send a letter to all members and donors asking them what they would like placed in the Garden as a memorial. Ten projects were listed in the letter. The project, when decided on, will be constructed this summer.

The Director reported that the Garden has been fortunate in acquiring 40 new library chairs of heavy birch with walnut finish matching the library shelves. The cost was $406. Bids are being taken for construction of three library tables to match those in the Auditorium. Reports were also given on the excellent services that thirty-five volunteers have been donating to the Garden since the early part of January. This use of volunteer workers is a plan initiated by Fred Baselt to supplement in some way the devoted work for the Garden of the late Lois Porter Earle. Volunteers are continuing through the summer months, and their relations with the regular staff are wholesome and most gratifying.

There have been many donations to the Garden in the form of cash, a flag, furniture, equipment, books, periodicals, plants and seed during this past year, for which the Garden again wishes to extend its thanks to the donors. All donations, it may be repeated, are tax-deductible. Another thing that we wish to relay to the Garden's friends and members is this: many people review their wills periodically, and we wish to encourage you to designate the Garden as a beneficiary in your estate. Memorial funds have also a definite place in an organization like the Garden, supported solely by private contributions.

# ARIZONA CACTUS & NATIVE FLORA SOCIETY, INC.
# SPONSORING THE
# DESERT BOTANICAL GARDEN

## FINANCIAL REPORT

**5/1/67 — 4/30/68**

| | | Comparison 1967-1968 | 1966-1967 |
|---|---|---|---|
| **ASSETS** | | | |
| Accounts Receivable | | $ 252.00 | $ 109.07 |
| Inventory | | 8,022.93 | 8,983.54 |
| Deposit Industrial Insurance | | 175.00 | 136.00 |
| Cash | | | |
| Valley Nat'l Bank (Checking) | | 2,878.43 | 3,770.64 |
| Valley Nat'l Bank (Cert. of Deposit) | | None | 12,000.00 |
| Valley Nat'l Bank (Savings Account) | | 80.62 | 1,625.46 |
| 1st Fed. Savings, Tempe (Cert. Deposit) | | 2,800.00 | 2,800.00 |
| 1st Fed. Savings, Tempe (Savings Acct.) | | 238.36 | 70.36 |
| Petty Cash & Cash Register Money | | 289.00 | 289.00 |
| | | $14,736.34 | $29,784.07 |
| In Trust | | | |
| Lois Earle Memorial Fund | $2,759.00 | | |
| Hiram Pratt Memorial Fund | 167.00 | | |
| **LIABILITIES** | | | |
| Accounts Payable (Note, Valley National Bank) | | $2,500.00 | $152.52 |
| Arizona State Withholding Tax | | 26.53 | 16.31 |
| Industrial Insurance Payable | | 29.00 | 23.34 |
| | | $2,555.53 | $192.17 |

* * *

| | | |
|---|---|---|
| **INCOME** | | |
| Retail Sales | $46,422.76 | $42,868.47 |
| Wholesale of Garden Books | 1,716.27 | 1,833.81 |
| Wholesale Seeds | 7.00 | 2,398.48 |
| Contributions | 316.92 | 100.05 |
| Voluntary Admissions | 11,416.10 | 10,794.08 |
| Memberships | 4,341.50 | 4,420.00 |
| Endowments | 16,700.00 | 13,700.00 |
| Interest | 573.54 | 608.57 |
| | $81,494.09 | $76,723.46 |
| **EXPENDITURES** | | |
| Purchases for Bookstore Resale | $24,057.36 | $23,444.26 |
| State Sales Tax at Bookstore | 1,594.78 | 1,314.79 |
| Second Printing, CACTI OF THE SOUTHWEST | None | 2,053.08 |
| Gross Wages | 31,218.79 | 31,987.48 |
| Payroll Social Security Contributions | 1,205.05 | 1,205.23 |
| Office Supplies | 671.97 | 472.01 |
| Library Periodicals | 96.50 | 125.65 |
| Monthly Saguaroland Bulletin | 1,675.70 | 1,672.93 |
| Utilities | 2,546.75 | 2,319.87 |

| | | |
|---|---|---|
| Fleet Auto Expense | 1,491.04 | 1,457.63 |
| Insurance—Life, Accident & Hospital | 2,859.62 | 2,405.25 |
| Insurance—Industrial Compensation | 468.82 | 278.55 |
| Insurance—Fire, Theft, Liab., Prop. Damage | 1,093.00 | 1,252.47 |
| Cactus Show | 323.77 | 900.00 |
| Travel, Entertainment, Pub. Relat., Misc. | 1,030.82 | 2,083.05 |
| Advertising | 566.33 | 640.08 |
| Garden & Building Maintenance | 1,864.39 | 1,954.54 |
| Property Tax & Lease | 42.62 | 36.74 |
| Capital Improvements: Library, $21,632.45; 4-car carport, $1,546.17; Archer House carport $1,978.60; Electricity to Cactus House, $663.99; 830 feet of water line, $409.45 | 26,230.66 | 811.22 |
| Above figures subject to audit. | $99,452.11 | $76,414.83 |

ATTENDANCE of 81,457 persons contributed $11,416.10 or .14 per person.
SALES of $46,422.76 divided by 81,457 persons averaged .57 per person.
MEMBERSHIPS—876 (1967-68) 780 (1965-66)
810 (1966-67) 712 (1964-65)

## ANTICIPATED BUDGET 1968 - 1969

| | | | |
|---|---|---|---|
| Bookstore Sales | $47,500 | Purchases for Bookstore | $26,000 |
| Wholesale of Seeds | 800 | General Operating | 4,550 |
| Wholesale of Books | 2,000 | Building & Improvements | 2,000 |
| Contribution | 400 | Fleet Operation | 1,300 |
| Voluntary Admissions | 12,000 | Utilities | 2,500 |
| Memberships | 4,500 | Insurance | 4,000 |
| Endowment | 17,000 | Sales Tax | 1,500 |
| | | Salaries | 33,000 |
| | $84,200 | | $74,850 |

| | | | |
|---|---|---|---|
| The following groups **met at the Garden:** | | 1 Bonsai Demonstration | 125 |
| 114 Elementary School Classes | 5,394 | 2 Out of Country Groups | 62 |
| 7 High School Classes | 350 | 3 Head Start Programs | 144 |
| 7 University Classes | 195 | 1 Boys Ranch | 25 |
| 25 Desert Plant Classes | 710 | 2 Conventions | 64 |
| 42 Illustrated Lectures | 1,819 | Lectures were given to the following groups **away from the Garden:** | |
| 9 Orchid Society Meetings | 184 | | |
| 9 Cactomaniac Meetings | 481 | 4 Garden Groups | 84 |
| 12 Garden Clubs | 267 | 4 Civic Groups | 152 |
| 11 Girl Scout Groups | 181 | 1 Cactus Club | 36 |
| 4 Board Meetings | 72 | 19 Field Trips | 405 |
| 1 Desert Institute Class | 40 | 1 Resort | 75 |
| 1 Annual Cactus Show | 11,824 | 1 Florence Critterton | 26 |
| 4 Out of State Groups | 154 | 1 Army Reserve | 16 |
| 3 Church Groups | 52 | 1 Y.W.C.A. | 47 |
| 1 Members' Meeting | 8 | 2 Hiram Club | 84 |
| 2 Day Schools | 26 | 1 Camera Club | 62 |
| 3 V.A. Hospital Groups | 56 | 2 Conventions | 342 |
| 3 Boy Scout Groups | 56 | 1 Bonsai Society | 76 |

(Continued on Page 69)

# ASPECTS OF THE DESERT

Second only to Grand Canyon in its dramatic plunge from rim to river, the Salt River Canyon, in transitional desert 95 miles ENE of Phoenix, is even more accessible, since US Route 60, a marvelously engineered highway, loops down to the river bridge and up again.

## SPRING WILDFLOWERS, 1968—summary and reports

How to describe the 1968 wildflower season? Anticipating a superlative year for desert blooms, we enlisted "reporters" from different areas of the desert to keep us informed of the variety and prolificacy of wildflowers. You have read the reports in previous issues.

Now, in June, we shall give you the end-of-spring reports and try to summarize the season.

Was it superlative, ordinary, disappointing, uneven — what? The answer is: superlative, ordinary, disappointing and uneven. Readers will remember some outstanding reports on individual species. They will also recall spring trips that they themselves made. So, what made Spring 1968 what it was?

The 1967-8 winter rains were very heavy, giving promise of heavy flowering. February and March (we use the Phoenix figures, which are typical) had about average raines (1 inch) but the temperatures were higher than normal and the winds were also higher by 20-25 percent. The combination of higher temperatures and stronger winds acted on the desert like a blotter, drying much of the moisture the rains gave.

April, which might have been the peak of the season, had no rain at all. In past years the "Easter rain" has always brought out desert flowers, even in sub-normal years, but in 1968 there was no such rain, only more drying, warm winds.

By no means was this past spring a failure. In scattered areas, small and large, some no larger than an acre, others measured in miles, there was great beauty, although beauty short-lived. You had to look for it, but it was there.

In sum, this may not have been the year of glory we hoped for, but it was well above average. It didn't win the pennant, but "wait 'til next year!"

(Note: the following reports differ in some ways from our general summary, showing again how "spotty" the season was.)

### (1) From the Littlehorn Area

This was a year of contradictions in the Littlehorn area. Although heavy winter mosture and early warm weather indicated a better-than-average wildflower season, we were vastly disappointed. The plants had an early start with additional well-spaced showers to keep them growing. Then the nights turned sharply cold again, killing many, the regal Ajo lily included.

The only two plants common were the little Buck Plantain which carpeted the bare ground and rocky areas everywhere, and, almost as prolific, the Fremont Pincushion.

Our showiest displays were the chuparosa and the familiar brittlebush. Although some years the sides of rolling mesas offer the color impact of large masses of purple phacelia and yellow beadpod with patches of white tackstem for accent, this spring they were drab with only plantain.

Here are some seldom-mentioned locals, less noticed than the more colorful species: Velvet Rosette; Indian Root, **Aristolochea watsoni**; Twining Snapdragon, **Antirrhinum filipes**; Climbing Milkweed; Yerba de la Rabia, **Acleiscanthes longiflora**; Ghost Flower; Broomrape, **Orabanche sp.**; Rock Hibiscus, **Hibiscus coulteri**; **Carlowrightia arizonica**; Desert Hyacinth; **Filago arizonica**; Christmas Cholla especially attractive.

Although we enjoyed the beautiful flower season, we did miss the huge mounds of colorful mallows: ivory, rose-pink, cerise-rose and deep rose-red. Other desir-

ables too few were Straggling Mariposa, Prickly Poppy, Scorpionweed, Sunflowers, Gold Poppies, Larkspur and Ghost Flowers. More profuse than average were Heronbill, Brittlebush, Spiny Goldenbush, Yellow Head, Arizona Filago and Marigolds. Counted in this area were over 170, far less than average good years. Many found remain unidentified, so are not listed. This resume about wraps up our 1968 wildflower season, leaving us anticipating next year's revelation.

**—B. Hovatter**

**(2) From S.E. Arizona, Hereford Area**

April. About everything in bloom last month still going strong. The normal late spring flowers now, cactus and yuccas, not dependent on the rains, as annuals are. A drastic freeze on May 6, but it seemed to do little damage.

Lower elevations are dotted with full flowered stalks of Spanish Bayonet, and hedgehog cactus are easy to spot from their huge flowers. **Mammillaria macdougalii** and some of the Coryphanthas are beginning to show buds. In the higher elevations **E. triglochidiatus** seem to have more flowers on them than ever before.

Squaw bush, **Rhus trilobata,** with tiny white flowers and lots of sticky orange-red berries, is in bloom, and ocotillos are showing color, it won't be long before they are out, too.

**—Nona B. Mott**

**(3) From the Wickenburg Area**

**April.** Weather sunny. A few scattered showers and wind first half of month. Orange mariposas on wane, snakeweed in best bloom, fairy duster best we've seen, goatbeard, purple thistle, marigolds, pincushions or morning bride, goldfields, phacelias 2 kinds, lupines first half of month, last half lupines gone and hill covered with pink windmills, mallow, wild tobacco, rock daisies, Mohave aster gone to seed. Blue dicks and purple ground cherry gone, whispering bells, buckwheat, filaree, chia gone to seed, prickly poppy, prickly cryptantha gone to seed, buttercups, poppies on wane, light blue larkspur first of month, paperflowers at best, chacote at best, melampodium, layia, and white desert zinnias.

**May.** Sunny and warm all through month. Some wind at times.

Mockingbird Hill: This hill and the wash had the largest variety of flowers all spring that we have found anywhere. For this month: Desert senna last half of May, pink windmills first half, filaree, chacote last half of May, wild tobacco stylocline, snakeweed, paperflower, yellow bells.

Constellation Road: Purple aster, fairy lanterns, bladderstem, wild tobacco, melampodium, thread plant, euphorbia polycarpa, sand cress, marigolds, paperflowers, snakeweed, woolly daisy, mentzelia first half, goldfields, green- and grey-leaf encelias, deer vetch, golden crownbeard, bedstraw, fleabane.

**—Ida Smith**

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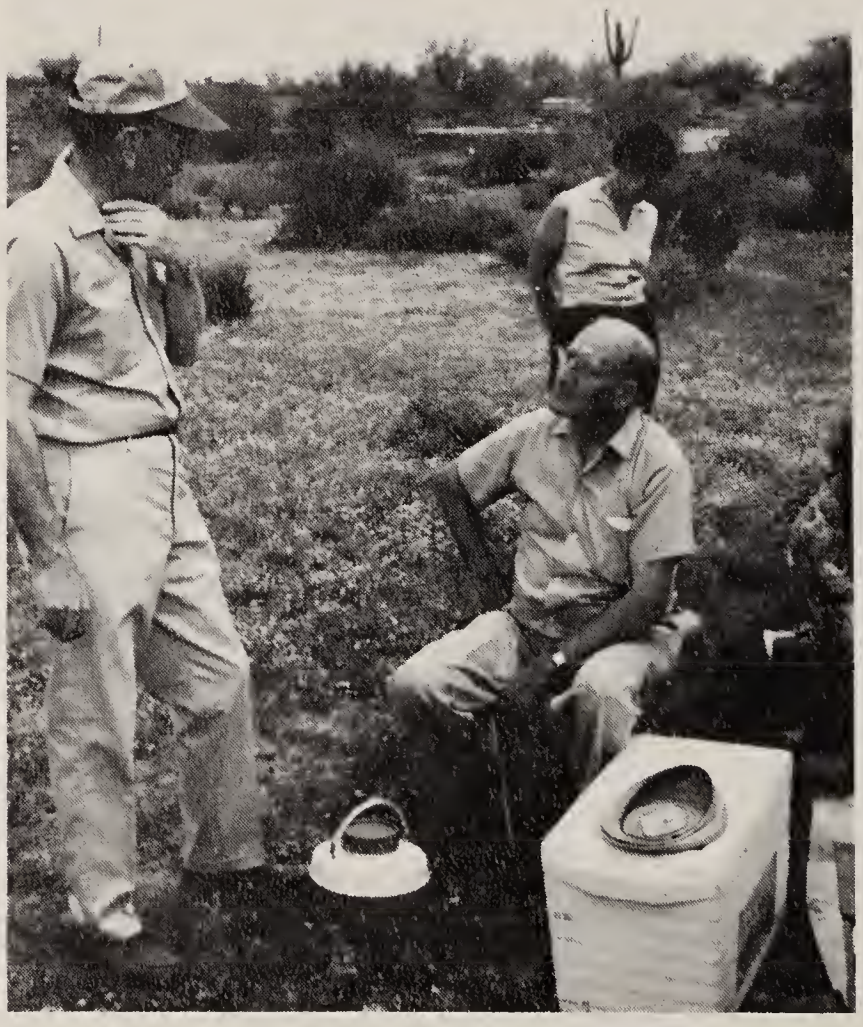
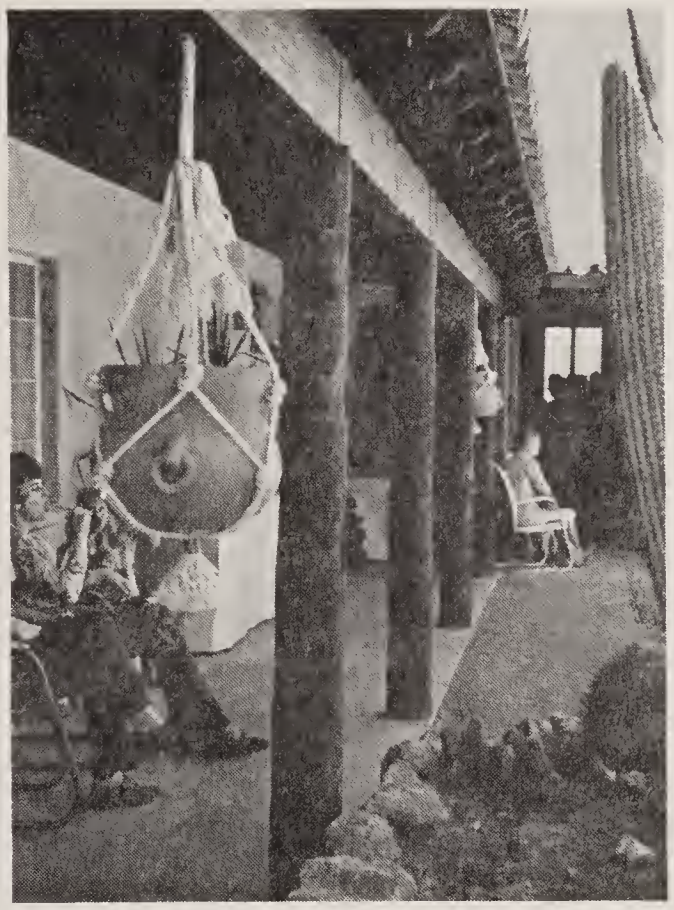
(Continued from page 66)

**1968 - 1969 IMPROVEMENT PROGRAM**

Erect "Arizona Rainbow Trail" Ramada.
Erect Propagation Nursery.
Erect Lois Porter Earle Memorial.
Install refrigeration units in Herbarium and labeling rooms.
Black-top remaining paths in Garden.
Purchase Hermes engraving machine for plant identification labels.
Paint Bookstore interior.

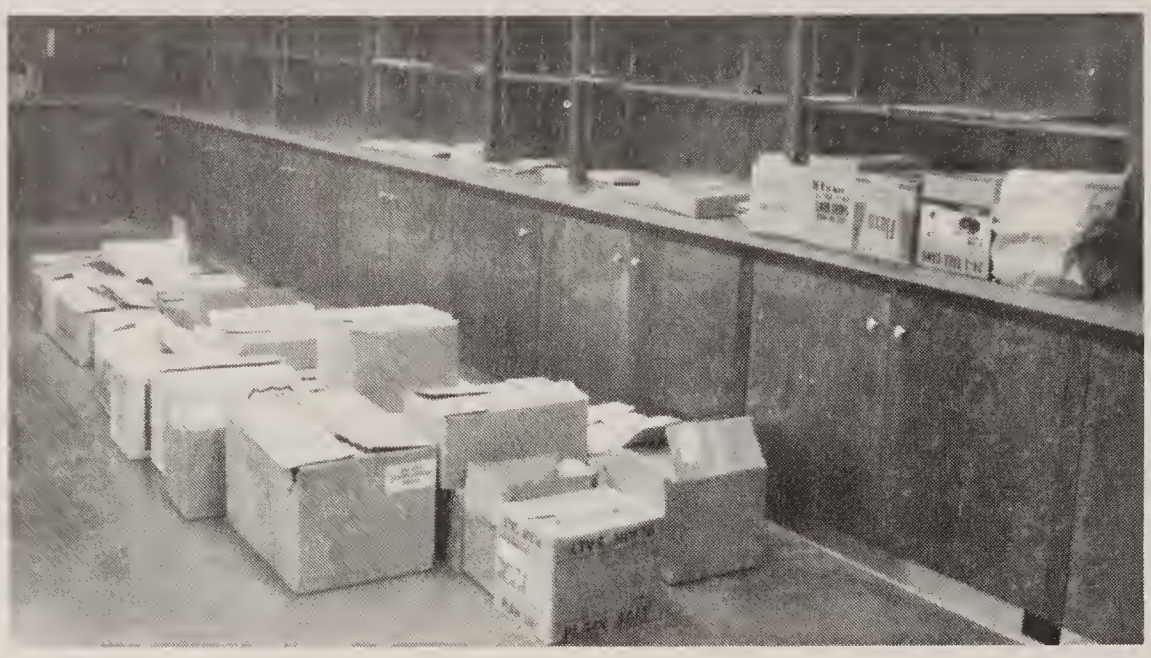
## This Year at the Garden—





A few of the year's "things done": a Brownie group taking their Garden visit seriously, and Leica Club members in a field of flowers asking questions of Director W. H. Earle during their field trip's lunch stop. At the Garden photography goes on all year, for record and for publicity. The owl-clover at far left is albino, not pink. Many photos like the tackstem (top left) appeared in various papers. And always, lots of visitors during the Cactus Show, afoot, in wheelchairs, and resting on our new Library's porch.

# PROGRESS IN THE LIBRARY



Here is a look at our completed but not yet filled and furnished library.

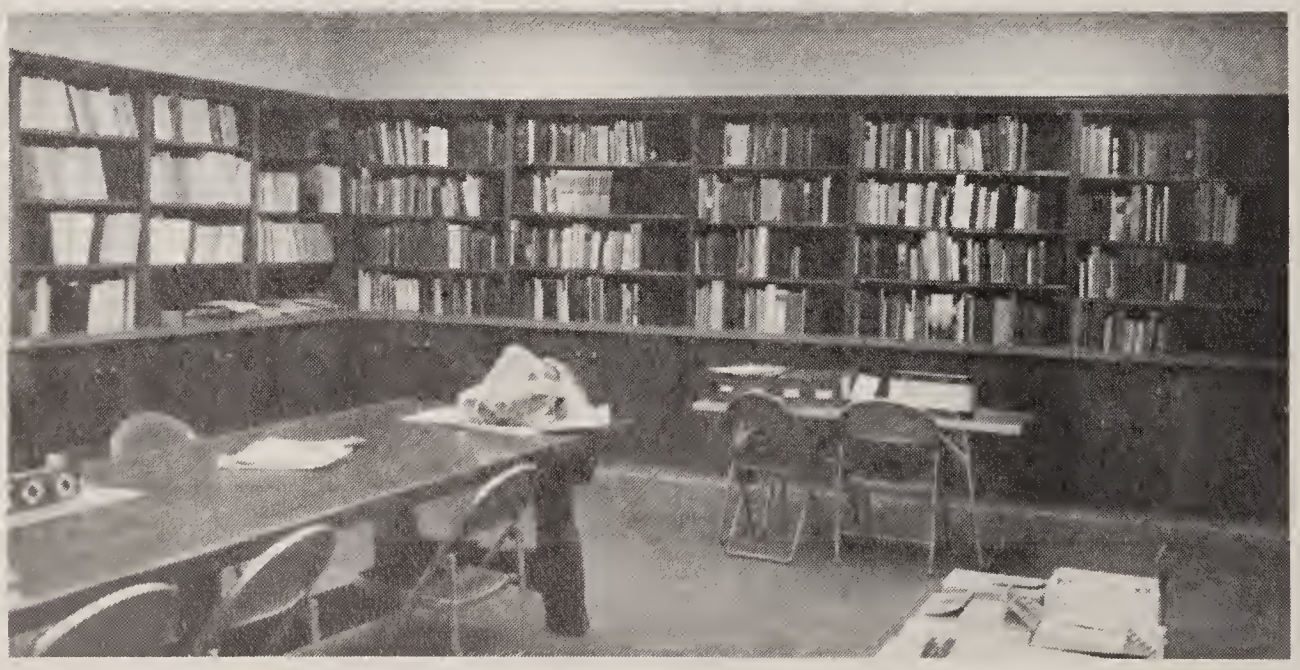
In the top picture you see thirty-two boxes — twelve hundred pounds of books, bound botanical magazines and pictures — all ready to be unpacked. This is only a portion of the extensive library of Mr. M. C. Richter, of Santa Barbara, California.

Mr. Richter has willed his complete library on cactus and succulents to the Garden, but he is generously releasing portions of it to us from time to time, while still adding to it and continuing the task of indexing the complete library.

As mentioned before in the Bulletin, Mr. Richter has built this vast library for more than forty years, and recently added two substantial collections, those of the American editor Scott Haselton and the French editor P. Montandon.

Because of Mr. Richter's decision that the Garden will be the recipient of his library, we will eventually have, without exaggeration, the world's most extensive private library devoted to cactus and succulents.

The bottom picture can do no more than given an idea of the handsome walnut bookshelves and cupboards, red laminate counter-top and tile-red floor. The books you see in this picture are part of our own collection. The furniture is what it looks like, "make-do", including the folding picnic table at which volunteers have been checking, cross-indexing and re-cataloguing the books. One day, of course, we hope to have furniture to match the rest of the library.



# SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XXII Aug.-Sept. 1968 No. 7

30″ tall clump of *Amsonia hirtella* in flower (article on page 83).

REG MANNING

# SAGUAROLAND BULLETIN

Published and owned by the Arizona Cactus and Native Flora Society, sponsors of the Desert Botanical Garden of Arizona. P. O. Box 5415, Phoenix 85010. Saguaroland Bulletin attempts to promote the Garden and to provide information on the desert plants and their culture. Subscription $5.00 per year, the subscription including active membership in the Society and the Desert Botanical Garden. Issued 10 times a year.

W. HUBERT EARLE, Editor
LILLIAN DIVEN, Associate Editor

Volume XXII | Aug.-Sept., 1968 | No. 7



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# Editor's Notes

**WHAT DO YOU DO** — in the Garden during the summer when it is hot and all the tourists are away? We are asked this question from many folks in the valley and even our members residing away from Arizona.

This summer **ATTENDANCE** was the highest on record. 150-200 visit the Garden daily and 200-350 on Sunday. Many bus loads of tourists from other parts of the world have visited us this summer. High school and college students have made science trips to see and study the desert plants.

Summer church Bible schools have brought their classes to study some of the plants mentioned in the Bible.

Y.M.C.A. leaders have brought several large groups to the Garden, then to have a picnic, then to visit the adjoining educational Phoenix Zoo.

Many botanists have used our new Library this summer and have joined the Garden.

The above pertains only to the visitors but there are other categories essential to the Garden's operation such as **MAINTENANCE** — This summer we bordered with cement, a new brick path at the rear of the Library; we put 200 pounds of roofing on the auditorium roof; we built up a rock wall to retain a service drive on the east side of the warehouse and carports; installed insulation, new ceilings and painted the herbarium and adjoining room — in these rooms we then installed refrigerated coolers allowing them now to be used in the summer.

This summer our student horticulturists, Lyle McGill and Stan Scott stuck with the job of clearing and thinning out the **PRICKLY PEAR** cacti. These had not been pruned for twenty years and were crowding out other desirable plants. Over 25 truck loads were hauled away to the dump and the boys were literally "stuck-up' with spines and obnoxious glochids. We appreciate their "volunteering."

Fourteen **COLLECTING TRIPS** were made in the summer by the staff and garden members, making 115 new entries in our accession book, involving about 210 additional plants for the Garden from May 1 to September 1st.

Many **VOLUNTEERS** have continued to assist us in this never-a-dull-moment program this summer and we certainly extend our thanks to them.

**EVER FIND SOMETHING NEW?**

Ever find a new plant?

Ever find two new plants?

Ever find two new plants in the same week?

Ever find two new plants in two different countries in the same week?

Then you've been on Cloud Nine for days.

Your Editor had the above and rare experience May 15 & May 18 when he relocated and photographed a new Mammillaria 95 miles east of Hermosillo, Sonora, Mexico, then identified and photographed **NEOBESSEYA MISSOURIENSIS** in northern Arizona and described in following pages of the Bulletin.

# A NEW CACTUS FOR ARIZONA

D.B.G. photo

Wind-swept high Arizona plateau habitat of *Neobesseya missouriensis* showing the juniper and tuft-grass.

Last spring Robert J. Moulis, Phoenix, one of our members and a good grower of cactus, asked us about the location of *Toumeya papyracantha* which he wished to photograph.

On the morning of May 11th Bob had had no success in finding the Toumeyas and had pulled off the road among the junipers 11 miles northeast of Heber, Arizona, to have lunch with his son. As the rain decreased he suddenly noticed a small creamy blossom next to his truck and quickly got out to find the Toumeyas beginning to open their flowers throughout the area. (They usually open in the late morning with a half open flower and close at sunset to reopen again the following day).

D.B.G. photo

Three plants of *Neobesseya missouriensis* hidden along a clump of tuft-grass.

As Bob was photographing a Toumeya he noticed an adjacent strange cactus with grooved nipples protruding one-half inch out of the soil and bearing a pinkish white flower that did not have the spines or shape of *Coryphantha vivipara var. arizonica* found in the same areae. He photographed it and the following week showed us the slides. We quickly changed our schedule and left early the following Saturday with Bob to further investigate the find.

We drove up above the Mogollon Rim (6100 feet elevation) Saturday, May 18th, and the clear cool morning air was a relief from our desert valley heat. As we approached within a quarter of a mile of the location that Bob had marked, we were stopped by a Basque sheepherder with two sheep dogs and about a thousand sheep heading north to the summer feeding grounds. Our first thoughts were that the slowly moving sheep would nibble off all the Toumeyas and possibly the unknown cactus. Later our fears were allayed as the sheep passed over

the cacti nibbling only on the new growth of the prevailing tuft-grass.

While being surrounded by sheep and slowly moving with them, we passed our cactus and had to backtrack to them as Bob had encircled them with rocks for easy identification. They, like the Toumeyas, grow amongst the short tuft-grass and cannot be seen unless you crawl along the ground on your knees and literally feel each tuft of grass.

D.B.G. photo

Tubercles are barely out of the ground and plant is not much larger than a quarter.

We photographed the Toumeyas and the new plants and removed two for the Garden. We were not yet positive of the plant until we could find one with fruit. We continued to search for others radiating out for quite a distance from the first find.

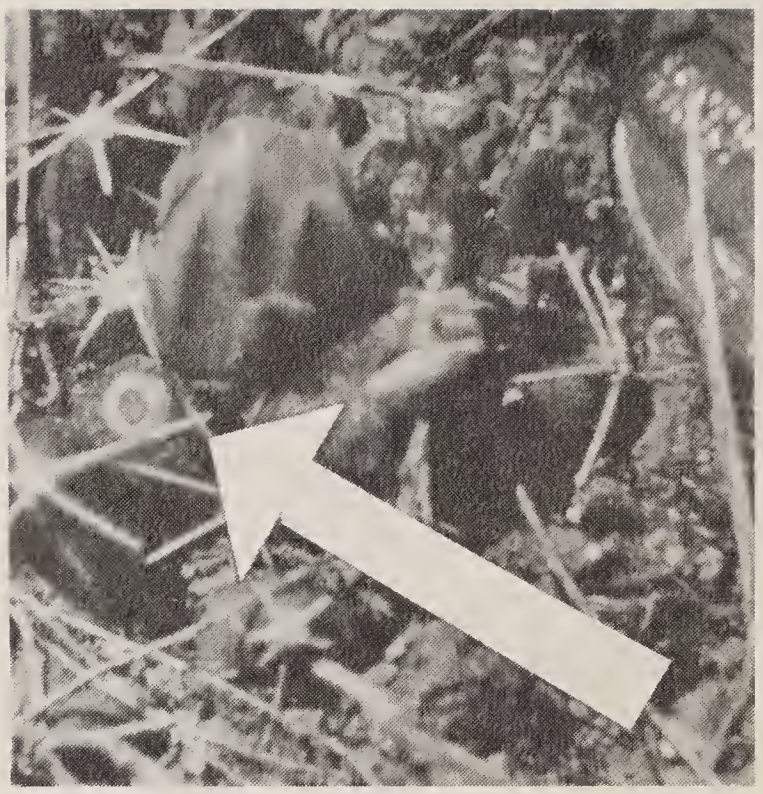
In the very late afternoon while creep-amongst the Toumeyas, with the low setting sun in the background, I spotted something red and alien to the area about 25 feet away under a bush. Quickly going to it and lifting up the branches of the bush I found one of the plants with a large red solitary fruit that had been hidden from the birds and rodents but which the low sun's rays had cast a reflection.

D.B.G. photo

*Neobesseya missouriensis* with one-inch pink flowers.

We gently removed the fruit, opened it to find black pitted seeds bearing a prominent white aril or attachment scar. We then knew this was *Neobesseya missouriensis* as it had the above identifying characteristics.

Over the past fifteen years reports have filtered into the Garden from other collectors that they had seen the plants in various parts of northern Arizona but no positive identification had been made till now. In 1961 Dorothy Humphrey, Mesa, Arizona, one of our high school students brought in a large *Neobesseya missouriensis* with a group of *Coryphantha vivipara var. arizonica* as she was doing a Science Fair project. We returned to the site of her collection, 12 miles northeast of Prescott, Arizona, many times but could never find another



D.B.G. photo

*Neobesseya missouriensis* with its red fruit.

plant so did not report on the find. The discovery of Bob Moulis does not show any concentration of plants but they are sparsely scattered through the junipers att 6125 feet in association with *Toumeya papyrachantha Coryphantha vivipara var. arizonica, Opuntia polyacantha* and *Opuntia erinacea.*

Collecting plants has many disappointments but can be rewarding with something new. Chance is many times the main factor of discoveries. In the case of this new Arizona cactus the chance of being adjacent to another plant being photographed and then the chance of the sun's low setting rays on the solitary fruit of the plant under the bush finalized the plant's identity.

The Arizona *Neobesseya missouriensis* differs from the others only in that the spines have more pubescence, which is quite stiff; flowers are somtimes pink; anther filaments vary from greenish yellow to carmine. The photo of the Arizona plant (lower right) is identical to the illustration in Britton and Rose CACTACEAE Vol. IV, plate XI 1923.

DESCRIPTION:

NEOBESSEYA MISSOURIENSIS B & R 1921

Neobesseya missouriensis (Sweet) 1826

A solitary globose depressed plant one inch to 1 and one half inch in diameter; grooved to top side and spiralled; greater portion of plant underground; spines white, pubescent, about 10 with centrals locking: flowers greenish yellow to pink: stamen filaments green but also pink in the Arizona plants: fruit globose, bright red; seeds black, pitted with prominet white aril.

Type locality — On high hills along Missouri River.

Distribution — Northern Arizona eastward to the Great Plains from Montana to Mexico.

D.B.G. photo

Compare the size of the plant with the hand holding it.

# ASPECTS OF THE DESERT

In northeast Arizona along US Route 66 are the multi-colored mesas of the Painted Desert, chocolate, red, vermilion, pink, buff and gray. The soft rocks and clays were formed by successive layers of sediment on the ancient ocean floor, dyed by mineral-laden waters. Today Navajos and Hopis use these colors in their "sand paintings".

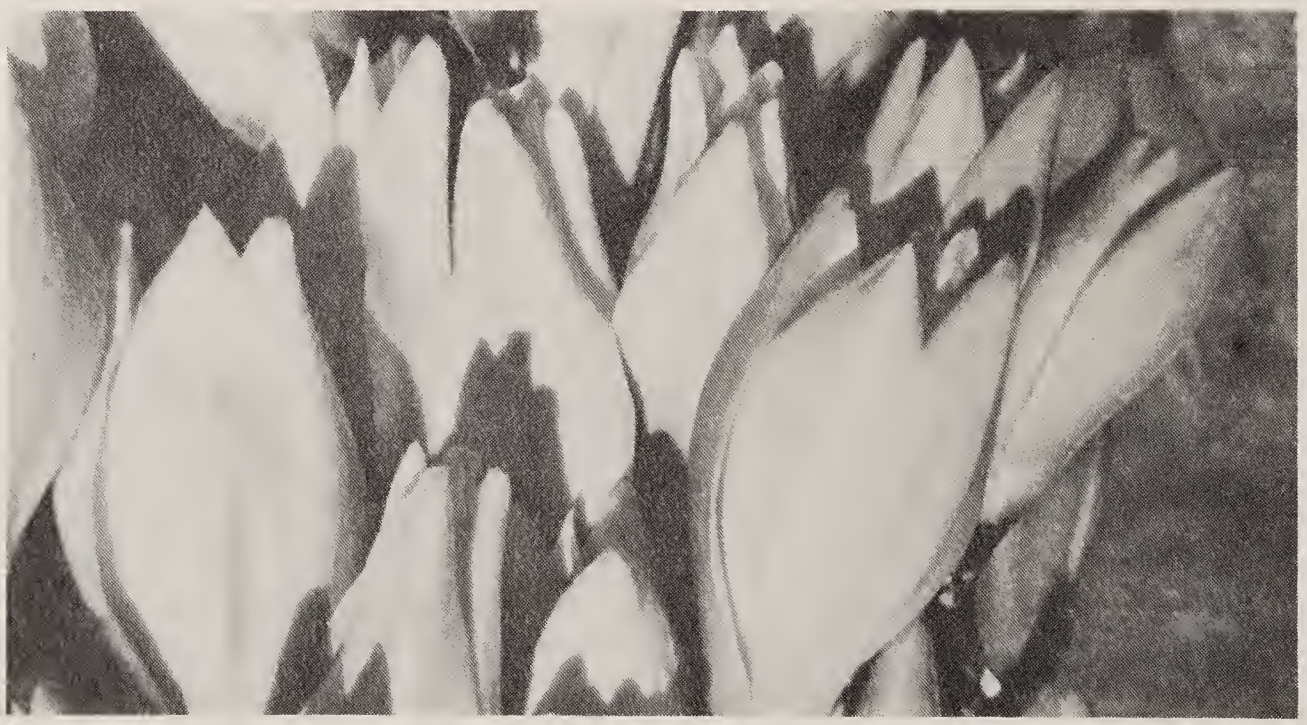
# YUCCA BACCATA Torr. Fam. LILIACEAE

## BANANA YUCCA

D.B.G. photo

Four-foot-tall *Yucca baccata* with a typical three-foot compact flower stalk barely emerging above the dagger-like leaves.

**Yucca baccata** is a small to medium sized yucca which is acaulescent or has short, procumbent-to-erect stems of up to one meter in length. In habit it is solitary or in open clumps to five meters in diameter, with few to many heads of leaves in dense clusters. The large, variable, swordlike leaves are often twisted and attain a length of 30 to 70 cm. and a width of from 3 to 5.5 cm. These are dark blue or yellow green and rigid throughout with the exception of the basal area. Leaf apex is acuminate to acute with a short stiff spine to 7mm. Leaf margin is filiferous with coarse strong fibers which are recurved and long per-



D.B.G. photo

Creamy-white pendent flowers of *Yucca baccata* appear to be sculptured.

D.B.G. photo

Eight-inch-long banana-like fruits hanging from a *Yucca baccata* stalk.

sistent. The inflorescence little surpasses the foliage, is narrow below, broader above, and often flat topped. Flowers are borne in a dense panicle from April to July depending on the elevation at which they are growing. These pendent campanulate flowers are white to cream and often tinged with purple. The lanceolate or oblanceolate petals are 6 to 9 cm. long and 1.5 to 2 cm. broad. Fruit is of the baccate type, being large, fleshy and indehiscent. It is symmetrical and

D.B.G. photo

An open flower of *Yucca baccata* showing the ivory-white pistil and stamens.

broadly cylindrical or long tapering and measures 7 to 20 cm. in length and 2.5 to 6 cm. in diameter. It is not persistent through the winter to the following season. There are many thick flat seeds produced in a single fruit and these are rough and dull black measuring 6 to 9 mm. wide and 7 to 11 mm. long.

Distribution of **Yucca baccata** is extensive, extending from southwestern Texas through New Mexico and Arizona into southeastern California. In the north it ranges into southwestern Colorado, southern Utah, and southern Nevada. In Arizona it is found nearly throughout the northeastern two thirds of the state at elevations from 750 to 2400 meters (2500 to 8000 feet).

**Yucca baccata** is a familiar plant in southwestern desert gardens, having always been easily obtainable since it is a major component of the local flora. It is very hardy, withstanding extremes of both cold and heat. Its utilization is primarily for form, but also for flowering in the desert landscape. Full sun and a well-drained soil are required as well as adequate space since in cultivation it becomes more robust in growth. Supplemental water should be given during extended drought to those plants not well established.

Propagation is by means of seed or by stem cuttings which root readily in the spring months. Seed germination is slow and so also is seedling growth rate. Flowering-size plants can be most quickly obtained by making stem cuttings and implanting them at the site desired.

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## AMSONIA HIRTELLA

## APOCYANACEAE
## DOGBANE FAMILY

D.B.G. photo

A clump of *Amsonia hirtella* four to five feet in width, growing in a sandy wash.

D.B.G. photo

Constricted white tubular flowers of *Amsonia hirtella* remain on the plant for several days.

In the Sonoran Desert at elevations of 1500 to 5000 feet, this handsome perennial is found. In Arizona it grows in Greenlee and southern Mohave Counties, thence south to Cochise, Pinal and Maricopa Counties.

The Dogbane Family, to which **Amsonia hirtella** belongs, contains some of the most handsome tropical and semi-tropical flowers, including Plumeria (or frangipani), Allamandia, Vinca (periwinkle) and Oleander. All of these plants have a milky or sticky juice, and the **Amsonia** seed pods resemble those of the oleander quite closely.

**Amsonia hirtella** rises from a heavy woody root in clusters of erect to ascending stems, 20-23″ tall. The numerous leaves are alternate and mostly ovate-lanceolate in shape. They measure to ⅝″ in width and 1¼-2¾″ in length. There is a loose, many-flowered head of tubular flowers which are constricted at the mouth of the tube then flaring to five nearly flat corolla lobes. The top of the flower measures about ½″ across, and the tube is about ¾″ long. The tube is a bluish-black (one authority calls it purplish) toward the base, and the corolla lobes and inside of tube are pure white. Many long slender white hairs are on the calyx lobes. The plant blooms in March and April.

**Amsonia** was named for Dr. Charles Amson, a Colonial physician of the 18th century.

This species grows in the open or among shrubs, often along streams and washes, preferring sandy soil. The photographs shown here were taken along a wash in Peralta Canyon, in the Superstition Mountain foothills. According to Bailey, there are several species grown in eastern U. S. gardens. Propagation is by summer cuttings or seed, but mostly by division of clumps.

Although we do not know of anyone's using **A. hirtella** horticulturally, we feel that this plant would be a good addition to a desert garden, keeping in mind that it will need extra water since it prefers to grow in the wild along desert washes. The flowers and the flower heads are attractive in shape, and the dark bluish tube, handsome in itself, makes the white corolla lobes look even whiter than they are.

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Jaeger, E., DESERT WILD FLOWERS
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Shreve & Wiggins, VEGETATION AND FLORA OF THE SONORAN DESERT

# OVERSEAS VISITORS

Gordon Rowley, Reading University, England, and L. E. Newton, Kumasi University, Ghana — both botanists — visited the Garden August 21-26. In the photo above they express their amazement (slightly exaggerated) at seeing saguaros "in the flesh."

These fine chaps gave our Cactomaniacs a delightful evening, showing slides of African succulents and a wild and wonderful film, "Cactus Polonaise," in which potted cactus "couples" and "solo dancers" performed. Trick photography by G. Rowley, music by F. Chopin. "Welcome to Ghana" slides were an eye opener.

Since both Mr. Rowley and Mr. Newton have been contributors to succulent journals for a number of years, they were most interested in our extensive library. They were also thoroughly happy to hike through our Arizona desert and discover plants they had previously seen only in greenhouses, as evidenced by the grins in the following photo.

# SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XXII October, 1968 No. 8

D.B.G. photo

Flowers of the Joshua Tree in a large, dense cluster. (See page 88)

REG MANNING

# SAGUAROLAND BULLETIN

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W. HUBERT EARLE, Editor
LILLIAN DIVEN, Associate Editor

Volume XXII | October, 1968 | No. 8

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# Editor's Notes

Included with this issue is our **Program of Activities** for 1968-69, which you may hang up or place on your bulletin board for future reference.

THE CLASSES in "A Better Understanding and Use of Desert Plants" have been expanded from five to six lectures and one field trip. The addition is a full session on "Use of Desert Plants for Landscaping." During the past six years this topic has been included with the session on propagation of desert trees and shrubs, but we have found that not enough time could be devoted to landscaping, hence the additional class.

These classes are open to all persons wishing to know more about our desert plants. Classes will be held at 3 and 8 P.M., Registration is $5.00 per person and is applied to membership in the Garden.

Another class in the serious study of cacti will be held on Tuesday evenings at eight, when there is no conflict with meetings of the Cactomaniacs and the Arizona Orchid Society who meet on the first and third Tuesdays of the month respectively. So many persons have asked for this study on identification, taxonomy and nomenclature that we have decided to try it this season.

MEMBERSHIPS are at an all-time high, close to nine hundred, with many new applications coming in from far parts of the world. Members are happy with the new "face" of the Saguaroland Bulletin, and we've had to increase the monthly printing order since the membership increased.

OUR BOOK STORE has had the busiest summer, because of surprisingly increased attendance during the hot months. If you need a price list of the many books we carry, drop us a line and we'll send you a copy.

SUMMER TRAVELING has been the heaviest on record, according to local hotels and motels. Phoenix is fast becoming a summer holiday area, with its cool buildings and motels, swimming pools, and low summer rates. The air may be hot, but it is dry. The "convention season" now lasts longer and begins earlier than in past years. Many upcoming conventions are arranging tours to the Garden through efforts of our Board Member Mrs. Frank Feffer.

OUR STAFF is busy catching up on odds and ends before our busy winter season begins. Seed has been collected and is being cleaned, painting and trim work done on various buildings, beds are being cleaned, ornamental iron gates for the library patio have been ordered and will be installed in early October.

YOUR EDITOR has been visiting botanical gardens, cactus nurseries, and libraries in the West during June and again in August. September finds him attending the American Association of Botanical Gardens and Arboreta on the 15th to 17th, and the Twenty-third American Horticultural Congress on the 18th to 21st, both at San Francisco.

## YUCCA BREVIFOLIA Engelm. Fam. LILIACEAE

## JOSHUA TREE

**Yucca brevifolia** is a large, open-branched, arborescent yucca with one to several trunks. The rough corky bark, exposed on the trunk and main stems, is deeply fissured and cross-checked, red-brown to gray in color. Stems are dichotomously rebranched many times and are covered with dead reflexed leaves. Height may extend up to 15 meters (50 ft.). At the base, the trunk often reaches 1.2 meters (4 ft.) in diameter. The numerous short leaves are pale blue or green with pungent tips. They are stiff, densely clustered at the branch ends, and measure to 35 cm. in length and 1.5 cm. in breadth. Leaf surface is striate, and the thin, yellow, horny marginal border is denticulate with small straw-covered teeth. Terminal spine is red-brown with a straw-colored tip and is about 1 cm. long. Inflorescence is short-stalked and 3 to 5 dm. long. The erect, ellipsoid, very dense panicle is from 25 to 40 cm. in length.

Appearing in March through May, the greenish-white flowers are 2 to 3 cm. long and subglobose in form. The sepals and petals are thick and fleshy, the outer segments being incurved and the inner outcurved toward the tips. Stile is very short and stout with three stigmas. Filaments are enlarged below the anthers.

Fruit is indehiscent and semi-capsular, soon becoming dry and spongy. It is ovoid to ellipsoid in shape, 6 to 10 cm. long, and 2 to 5 cm. in diameter. Seeds are dull black, slightly thickened, and measure 7 to 10 mm. in length. They are flat, near-orbicular in shape, with a

D.B.G. photo

A close-up view of the Yucca brevifolia blossom clearly shows the curving of the corolla segments and the exceptionally thick stile.

D.G.B. photos

The huge panicle at the left does not look out-sized on the twenty-foot Joshua Tree shown above.

smooth to slightly wrinkled surface.

Distribution of **Yucca brevifolia** is limited to the Sonoran and Mojave Desert systems, extending from southeastern Utah, and northwestern Arizona. In Arizona it ranges from northern Mojave into southwestern Yavapai and northern Yuma counties. Throughout its entire range it extends from 450 to 1800 meters (1500 to 6000 feet) on slopes, hillsides and desert plains.

The Joshua Tree has a very slow growth rate and is considered the oldest plant living in the southwestern desert. In the desert garden it is one of the early-flowering plants, with buds emerging in March. As a tall specimen plant it is rivaled only by the Saguaro and the Cardon in southwestern gardens, but its slow growth rate and the limited availability of large plants make utilization of it a rarity.

Percentage of germination of fresh seed is high. A well-drained soil is an important cultural factor in both seedling and older plants. Full sun exposure and adequate space are required for long-term plantings. There is a wide span of temperature tolerance, ranging from over 120 degrees F. to below freezing.

REFERENCES:


Benson & Darrow, The Trees and Shrubs of the Southwestern Deserts.

Kearney & Peebles, Arizona Flora

McKelvey, S. D., Yuccas of the Southwestern United States, Pt. 1.

Webber, J. M., Yuccas of the Southwest.

# MEMBER'S GARDEN—VIII

A green garden in a desert climate is practical and eminently suitable, as witness the garden of our Board Member John Eversole, recently re-elected Chairman of the Board for the seventeenth time.

There is year-round greenery in this spacious garden, supplied by handsome mature palms, **Washingtonia robusta** and **Arecastrum romanzoffianum,** the queen or cocos palm, as well as immense olive trees.

The phrase "outdoor living" has become almost a cliche, but it is really applicable in our climate where "room for living" doesn't stop at the living room walls. In the Eversole garden lawns are level with the interior floors, walled patios become rooms, roofless except for the tall palms, and indoors becomes outdoors with a minimum of change.

This is a part of desert landscaping which is different from much we have shown, but just as valid, and just as lovely.

# ASPECTS OF THE DESERT

Possibly the Mormons in the 1840's gave the name Joshua Tree to **Yucca brevifolia,** but it is not known definitely if they did, or why. "Forests" of this treelike Yucca are found in Arizona's Mojave, Yavapai and Yuma Counties, all in the west of the state.

## Emmenanthe penduliflora

## Hydrophyllaceae
## Water-leaf Family

# WHISPERING BELLS

D.B.G. photo

Newly-opened *Emmenanthe* blossoms, not yet hanging like bells.

Because the pendulous flowers remain on the stalk after they have dried, and rustle in the breeze, **Emmenanthe penduliflora** has earned the charming common name of Whispering Bells.

This spring annual is found in Arizona from Mohave, Yavapai and Gila Counties to Pima County at elevations of 4000 feet or lower, on slopes, along streams and under bushes. The habitat is, obviously, quite similar to that of the Phacelia, another member of the same family.

**E. penduliflora** has both stems and leaves covered with fine hairs. The leaves are pinnatifid, or cleft with narrow lobes. The much-branched stems arising from the base reach a height of from 8 to 21 inches, and the bell-shaped flowers, cream colored, are borne on thin decurved stalks. There are five sepals, and the campanulate corolla is shallowly five-lobed, about one-half inch long and nearly as wide. The flowers may be erect at first, but very soon become pendulous, as the pictures on this page show. They are said to be rather agreeably scented, although we have not noticed any scent.

The botanical name combines a Greek and a Latin word to give a concise description: **Emmenanthe** — abiding flower, and **penduliflora** — hanging flower.

REFERENCES

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Jepson, W. L., MANUAL OF THE FLOWERING PLANTS OF CALIFORNIA

Kearney & Peebles, ARIZONA FLORA

Munz, P., A CALIFORNIA FLORA

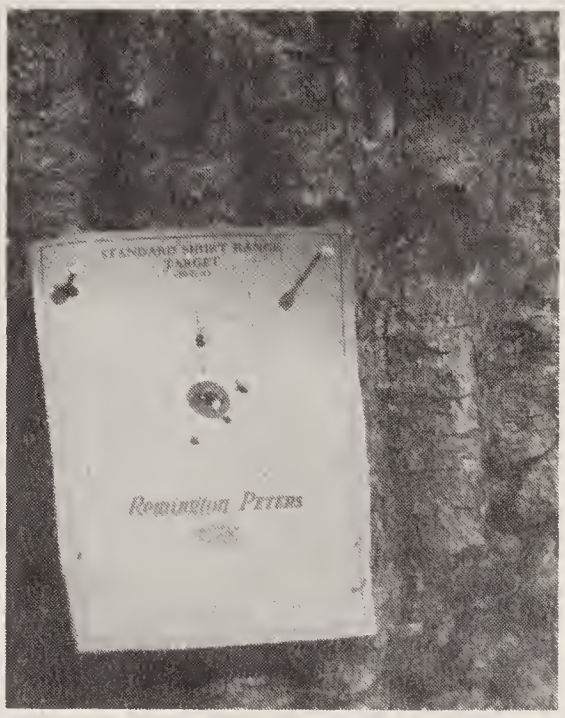
D.B.G. photo

The persistent bell-shaped flowers make the plant easy to identify.

## Saguaros as Targets

When roadside signs are riddled with bullets, it would be too much to expect that "gun-toting" vandals would leave the conspicuous saguaro alone. They don't. It makes a jim-dandy target — bullets don't ricochet off it as they do off tree trunks. And, besides, it's there. What better reason? Who cares about an old cactus?

Revolver and rifle shots removed from one "murdered" saguaro.




Nails and bullets are hard on saguaros. This one has healed over a pocket of infection.

Some saguaros just are not strong enough to withstand bombardment.

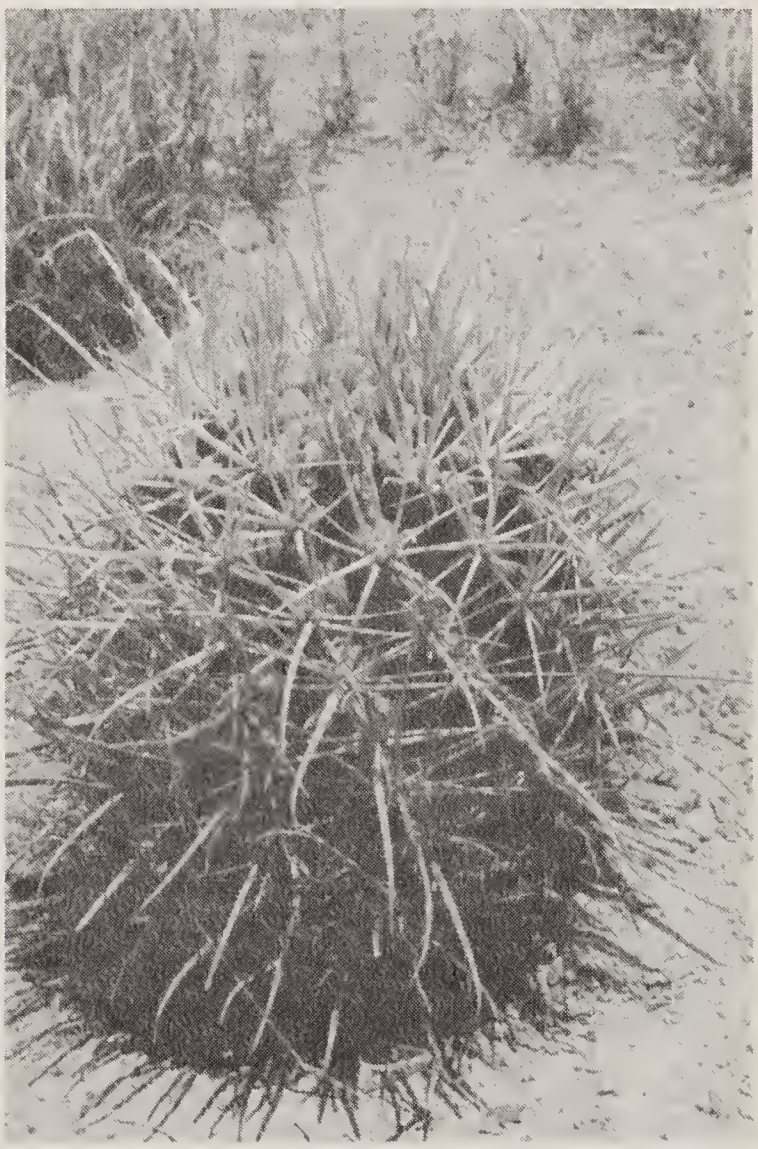
Saguaros can seal off some wounds and infections caused by target shooting. This one is a "strong" plant and has been used quite often as a prop for targets.

# ECHINOCACTUS PARRYI CACTACEAE

## PORCUPINE BARREL

This inconspicuous barrel is found in very few cactus collections. It is not a thing of beauty, seldom flowers, it grows slowly from seed, it is a hard plant to transplant from its hot dry Chihuahuan desert area to gardens with high humidity, yet it is a tough desert plant that stands a lot of dry abuse and grows quite well and flowers in our Garden.

Englemann described it in PROCEEDINGS OF THE AMERICAN ACADEMY 3:27, 1856, yet Britton & Rose in CACTACEAE placed it as a synonym of *Echinocactus horizonthalonius* despite the fact that the latter is a single plant with carmine blossoms while *Echinocactus parryi* is a single to clustered plant bearing yellow flowers, with less wool in is apex.



D.B.G. photo

*E. parryi* photographed near Ciudad Camargo, Chihuahua, Mexico.

Dr. Helia Bravo recognized it in LAS CACTACEAS DE MEXICO 1937 because it was listed as a species in ZEITSCHRIFT FUR SUKKULENTENKUNDE 3:285, 1928.

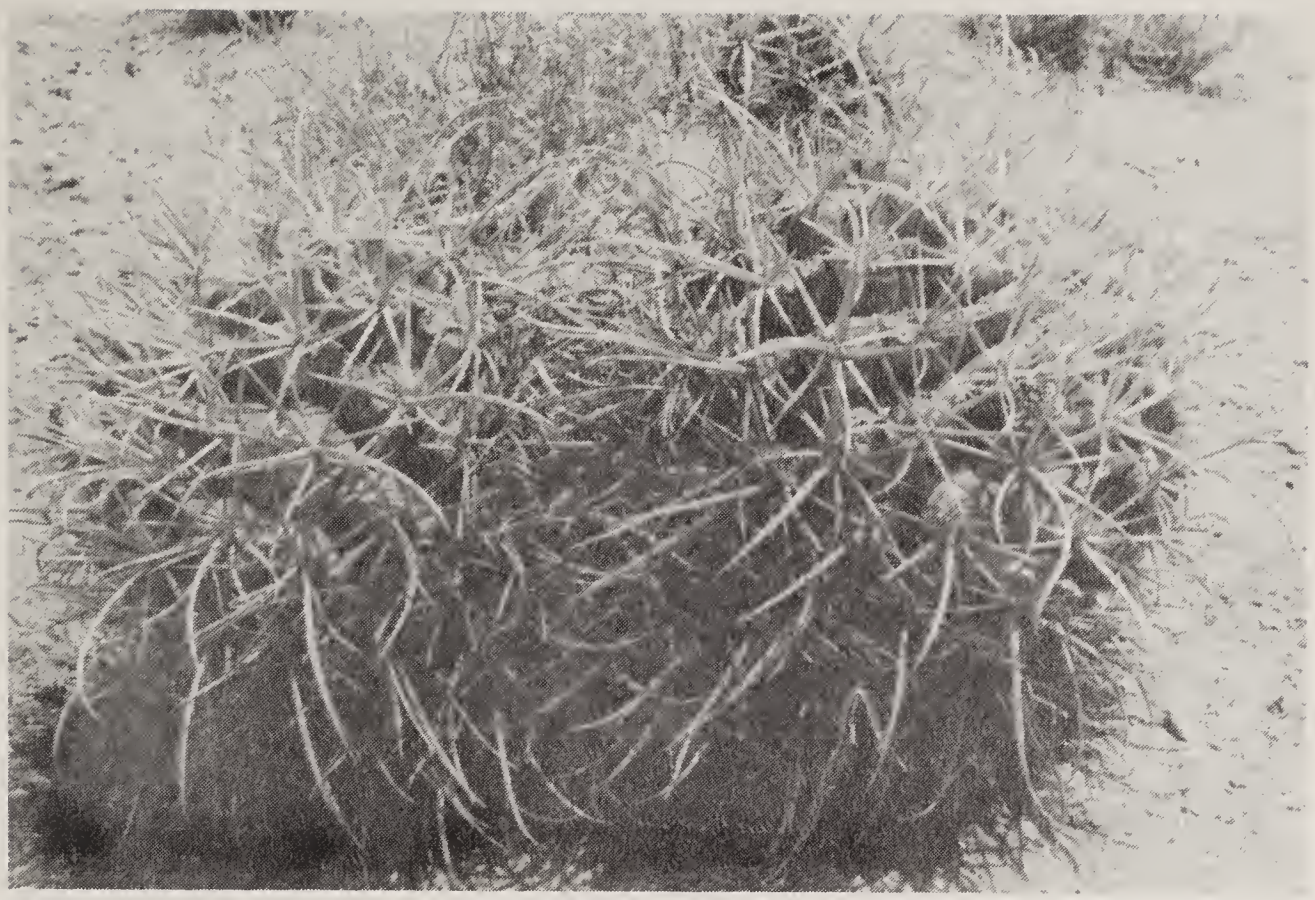
W. T. Marshall did not mention it in his CACTACEAE 1941 which was an addendum to Britton & Rose CACTACEAE, but he wrote of it in the SAGUAROLAND BULLETIN Vol. 7:102, 1953 after Whitman Evans rediscovered the plant and gave several to the Garden in 1951.

Curt Backeberg in DIE CACTACEAE p. 2649, 1961 lists it as a species and also indicates that F. Schmoll, San Luis Potosi, Mexico, listed it in his catalogue (1947) and was selling it under the name of *Echinocactus validus*.

*Echinocactus parryi* was named by Dr. G. Englemann to honor Dr. Parry who found the plants in the "Desert region southwest of El Paso toward Lake Guzman" in 1954 in the state of Chihuahua, Mexico.

If you travel south of El Paso you will find these plants scattered along Highway 45 beginning about 25 miles south of Juarez, to Delicias. The summer months can be very hot to search for them but they grow along with *Echinocactus horizonthalonius, Thelocactus pottsii, Echinocereus polyacanthus, Coryphantha macromeris, Echinocereus pectinatus* and *Cylindropuntia arbuscula.*

If you are going to the fall Olympics in Mexico City this year, take the time to look for this interesting barrel up to 12" high, 15" wide bearing long curved yellow, red and gray spines. Photograph them but be careful not to bring them into the United States unless you have a



D.B.G. photo

The Porcupine Barrel is found both in single and clustered forms.

Mexican Government permit to remove the plants.

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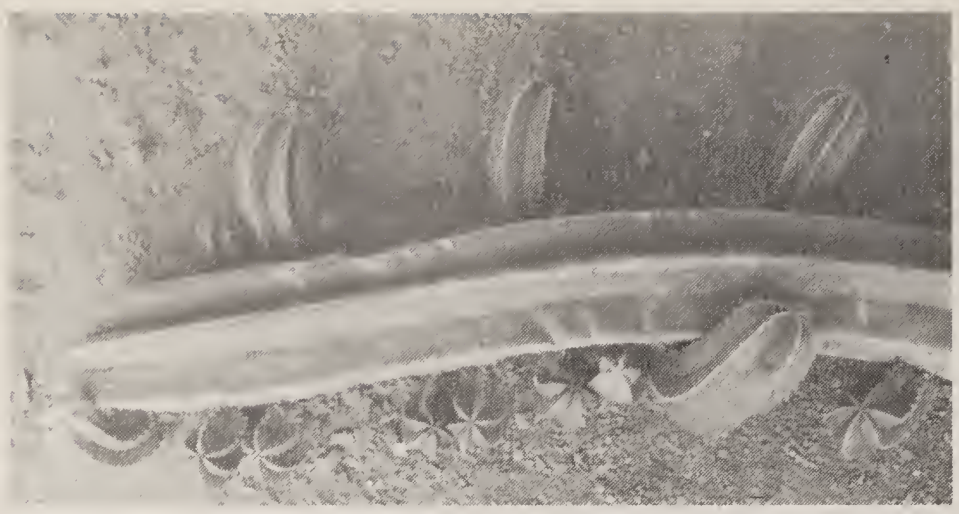
Bravo, Helia, Las Cactaceas de Mexico
Britton & Rose, Cactaceae
D.B.G., Saguaroland Bulletin
Englemann, G., Cactaceae of the Boundary
Marshall, W. T., Cactaceae

D.B.G. photo

Habitat of *Echinocactus parryi.* Note plant in left foreground.



**Once upon a time** there was a Cactus—a **Lemaireocereus marginatus,** or Mexican Organ Pipe — and an Arm broke off of it. Well, its Owner, being a Thrifty Type Owner, set this Arm aside to dry and heal, so he could plant it and have One More Cactus. But what did the darned Arm do? It began "arming" itself left, right, and in the middle. Here an Arm, there an Arm, everywhere an Arm, Arm. Thirty-four, to be exact. And all in three months. And all on a thirty-inch Arm. Now the Thrifty Type Owner plans to remove the larger new Arms, set **them** aside to heal, and then plant **them.** He may also have to be a Fast-moving Type Owner, because what if **these** Arms start shooting off Arms of their own? On the other Hand (sorry, Arm), you couldn't find an easier way to get a plant propagated.

## GARDEN ACTIVITIES

See "Editor's Notes" in this issue for details of this schedule and of the new study group. Please feel welcome to attend Cactomaniacs meetings and Orchid Society meetings, and bring guests if you wish.

| | | | |
|---|---|---|---|
| | | **OCTOBER** | |
| **Tues.** | **1st** | CACTOMANIACS | **8 P.M.** |
| **Tues.** | **15th** | ORCHID SOCIETY | **8 P.M.** |
| | | **NOVEMBER** | |
| **Sun.** | **3rd** | LECTURE—Arizona Cacti | **3 P.M.** |
| **Wed.** | **6th** | CLASSES—Deserts How Formed and their Plants | **3 & 8 P.M.** |
| **Thurs.** | **7th** | LECTURE—Arizona Cacti | **3 P.M.** |
| **Sat.** | **9th** | NATURE TRIP | **9 A.M.** |
| **Sun.** | **10th** | LECTURE—Arizona Wildflowers | **3 P.M.** |
| **Wed.** | **13th** | CLASSES—Desert Succulent Plants | **3 & 8 P.M.** |
| **Thurs.** | **14th** | LECTURE—Arizona Wildflowers | **3 P.M.** |
| **Sun.** | **17th** | LECTURE—Arizona Trees and Shrubs | **3 P.M.** |
| **Wed.** | **20th** | CLASSES—Culture of Succulent Plants | **3 & 8 P.M.** |
| **Thurs.** | **21st** | LECTURE—Arizona Trees and Shrubs | **3 P.M.** |
| **Sun.** | **24th** | LECTURE—Arizona Birds and Animals | **3 P.M.** |
| **Wed.** | **27th** | CLASSES—Desert Trees and Shrubs | **3 & 8 P.M.** |
| **Thurs.** | **28th** | LECTURE—Arizona Birds and Animals | **3 P.M.** |

# SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XXII November, 1968 No. 9

D.B.G. photo

Rose and white blossom of *Runyonia longiflora*. See article on p. 105.

REG MANNING

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# Editor's Notes

These "Notes" are finally being written at home base. Last issue's were written in Sacramento, previous issue's in Denver.

Your Editor has been on three marvelous trips (business plus holiday) this past summer. I'd like to share them with you. June: attended the graduation of my son and his wife at Humbolt State College in Arcata, California; visited with Dr. George Lindsay (the Garden's first Director), now Director of the California Academy of Science in San Franciso; picked up another gift of books for our Library from Mr. M. C. Richter of Santa Barbara; visited many cactus nurseries in Los Angeles; visited San Diego.

August: collected plants in northern Arizona, southern Utah; photographed birds at the sanctuary near Farmington, inspected the Utah University State Arboretum at Salt Lake City; spent three days with my son and his wife at Logan, where they were preparing for a two-year stay with the Peace Corps in Bolivia; collected plants in northwest Colorado, photographed alpine plants in Rocky Mountain National Park; spent half a day at the Denver Botanic Garden; enjoyed four days with the Otto Friedrichs', collecting and photographing wildflowers on the Continental Divide; visited the interesting Great Sand Dunes National Monument and the Mesa Verde National Monument; and looked with no success for a certain cactus at Shiprock, N. M.

September: Visited Henrietta's Nursery in Fresno, Calif., and Fred Wacker's Nursery in Sacramento; the Botanical Garden of U. C. at Davis; was house guest of Ann and Charles Genasci in San Francisco while attending the informative sessions of the American Assn. of Botanical Gardens and Arboreta as well as the American Horticultural Congress at the Fairmont Hotel. Tours were arranged to see Strybing Arboretum in Golden Gate Park, the Botanical Garden of U. C. in Berkeley, the Blake Gardens (U. C. Architectural Landscaping Dept.), Kensington Gardens, and Sunset Magazine's wonderful Menlo Park headquarters. A group met with Keith L. Davey, Chairman of the Saratoga Horticultural Foundation, to see new trees and shrubs at Saratoga, following the convention.

And still in September: Spent three days with my son's in-laws at Carmel; saw the interesting cacti hybrids being developed by Frank Reinelt at Capitola for the nursery trade; visited with Mr. Richter and the Santa Barbara Botanical Garden; called on many cactus friends in Los Angeles then visited the Los Angeles County Fair, Pomona, where several clubs had on exhibit large displays of cactus and succulents which attracted much attention—despite the active horse racing program!; later Huntington Botanical Garden and the Los Angeles County Arboretum with its demonstration gardens were both in fine condition; plants at Ernie Beahm's in

(Continued to p. 107)

# CORYNOPUNTIA PULCHELLA CACTACEAE

## DWARF CHOLLA

*Opuntia pulchella* from Engelmann's "Cactaceae of Simpson's Expedition-published in 1876.

This seldom seen cactus of Arizona and Nevada is considered in the Clavatae series along with the other 'club-shaped' chollas such as **Corynopuntia stanlyi, C. clavata, C. grahamii**, etc.

The plant was first found in 1857 by Henry Engelmann who as a geologist accompanied Capt. James H. Simpson, U.S. Topographical Engineer to explore the best immigrant routes through Nevada and Utah. He later gave the plant to his brother Dr. George Engelmann, St. Louis, who described it in 1858 as a new species **Opuntia pulchella** and who further stated "This was the smallest and prettiest species of the genus and belongs to the section Clavata. It is readily distinguished from its allies by the small joints and purple flowers."

In 1878 the plant was again collected by the 1st Lieut. George M. Wheeler, Geographical Surveys, U.S. Engineers, in Nevada and described by Dr. G. E. Engelmann as **Cylindropuntia pulchella.**

In 1922 Britton and Rose in CACTACEAE called it **Opuntia pulchella** with an illustration of a herbarium specimen collected by Thomas Means at Fallon, Nev. in 1909.

Dr. M.A. Borg in his book CACTI 1937 classified the plant as **Opuntia pulchella** describing it as "A very pretty, low, spreading species, up to 20 cm. high. Joints cylindrical, or conical, slender and up to 6 cm. long, covered with low warts or knobs, and of reddish colour. Areoles small, round, with yellow glochids. Spines 10 to 16, slender, 3 to 6 cm. long, the longest somewhat flattened, all reddish. Flower of a beautiful purple, about 5 cm. broad. Fruit red, with white areoles and long red glochids".

Stockwell & Breazeale in ARIZONA CACTI (U. of A. Science Bulletin #4) 1933 placed the plant in **Opuntia pulchella.**

Dr. Lyman Benson in THE CACTI OF ARIZONA (U. of A. Science Bulletin #5) 1940 did not mention the plant.

Kearney & Peebles FLOWERING PLANTS AND FERNS OF ARIZONA 1942 referred to **Opuntia pulchella** as "Reported from Arizona and to be looked for in northern Mohave County. Nevada."

J.S. Daston, Chicago Natural History Museum in AMERICAN MIDLAND NATURALIST 1946 apparently using various forms of **Corynopuntia pulchella** set up a new genus **Micropuntia** with three species.

Dr. Lyman Benson in THE CACTI OF ARIZONA 2nd edition 1950 named the plant as **Opuntia pulchella** as in the subgenus **Cylindropuntia** and is to be found from Hillside, Yavapai County to Chloride, Mohave County, and also in Nevada.

W. Taylor Marshall in ARIZONA'S CACTUSES 1950 placed the plant in the series Corynopuntia and called it **Opuntia pulchella.**

Large form, flowering, from Walker River, Nev. H. G. Rush photo from Pomona College Herbarium.

In the May-June 1956 issue of **CACTUS & SUCCULENT JOURNAL** Edwin Weigand, San Bernadino, Calif, stated that Mr. Daston's description of **Mircropuntia** was incomplete and drew up his own observations.

In the Nov.-Dec. issue of **C.&S.J.** 1956 Mr. Daston retaliated that the attempt of Mr. Weigand to correct the original descriptions with supplementary information was incorrect as no comparison had been made by Mr. Weigand of the original herbarium material deposited at the Herbarium of the Chicago Natural History Museum. Mr. Daston further stated that Mr. Weigand's photographs referred to a genus other than **Micropuntia.**

In the Jan.-Feb. 1967 issue of **C.&S.J.** Dr. Lyman Benson, Pomona College Claremont, Calif., explains the OPUNTIA PULCHELLA COMPLEX in that the genus **Micropuntia** and its species are merely various transitional and vegetative forms of **Opuntia pulchella** which in itself is a close relative of **Opuntia stanlyi,** a complex species consisting of various forms occuring from New Mexico to California and southward and belonging to the series **Clavatae.**

Curt Backeberg in his books DIE CACTACEAE 1962 recognized Mr. Daston's genus **Micropuntia** and added three additional species sent to him by Mr. Weigand in 1957.

CACTI OF THE SOUTHWEST authored by your editor in 1963 places the plant in the genus **Corynopuntia** because its stems are club-shaped.

It is certainly strange that so much has been printed on such a little-known plant that is no thing of beauty, hard to grow in cultivation, yet bears an unusual purple flower in late May or early June.

In our travels through northwestern Arizona and Nevada our observations support Dr. Lyman Benson's summary. Through somewhat the same geographical range we find that **Cylindropuntia whipplei** is found in low 6″ tall clumps and up to 4′ tall bushes, some very spiny, others nearly nude. Ecological conditions and adaption tend to change the phyiscal form of a plant over a period of many years.

Daston's photo showing tuberous root of this plant which he calls *Micropuntia brachyrhopalica.*

## Melampodium leucanthum — Fam. Compositae

DBG photo

Not a group of plants, but just a single plant of *Melampodium leucanthum,* photographed last August nineteenth.

There are several peculiar facts about this plant. It has an eye-catching two-inch-wide white flower with purple veins and a deep yellow center, yet it has never attracted the attention of horticulturists, while many less striking plants have been introduced into gardens. Nor has a common name been found for it, although a legion of inconspicuous flowers have had long-established common names. And the generic name, Melampodium, far from being applicable either historically or descriptively, means (in Greek) "black foot" — which Munz says is "meaninglessly applied to these plants."

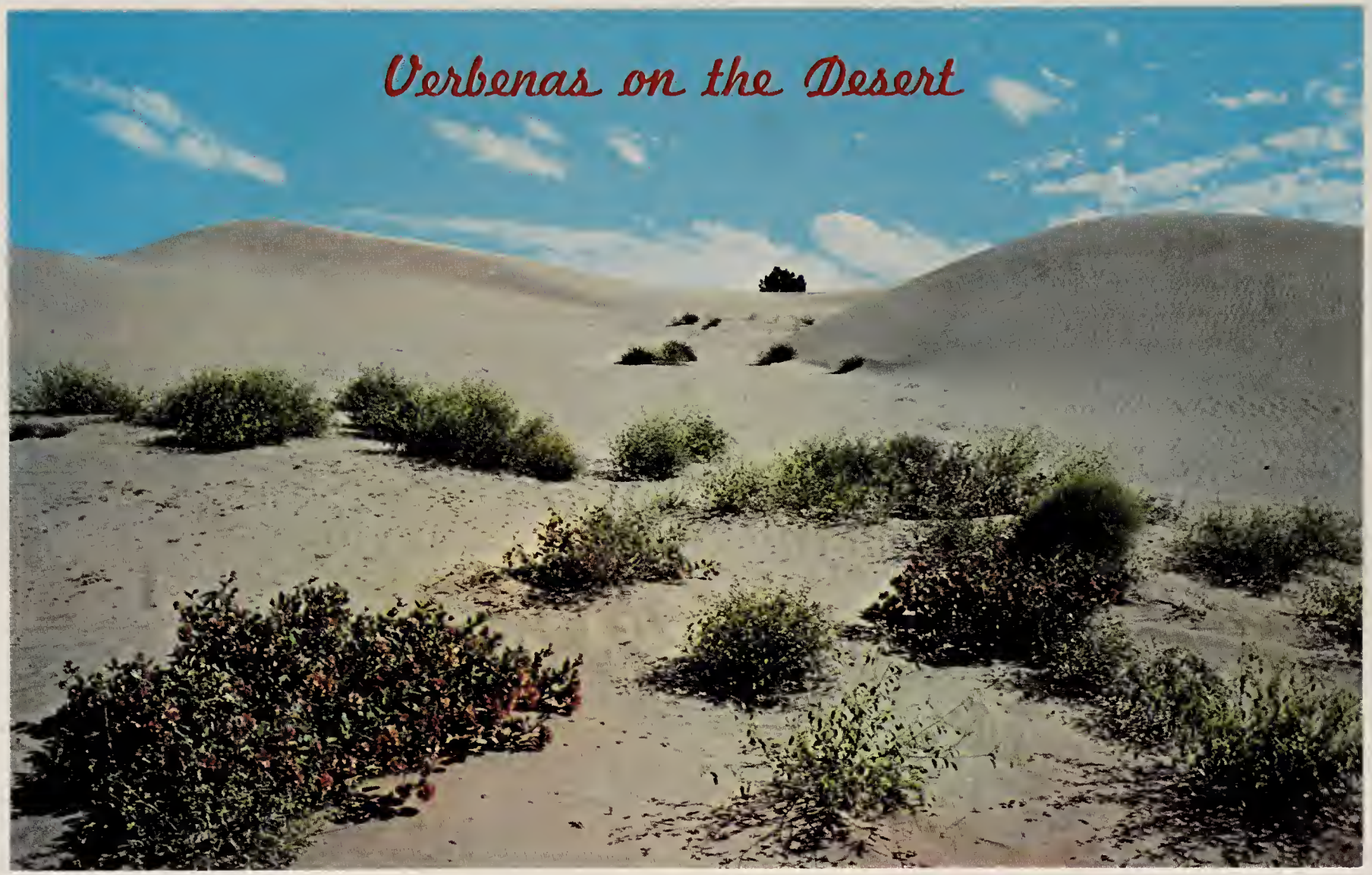
**Melampodium leucanthum,** in spite of the above, is a showy and attractive plant. It is a low and herbaceous perennial with numerous slender branches a ¼" wide and up to 2" long. The plant grows to a height of nine to twelve inches. (The one pictured here is 10" and 14" wide.) The two-inch-wide heads are made up of a center of tightly-packed flowers, as in all of the Compositae, which are deep yellow and are surrounded with pure white rays with conspicuous purple veins on the underside.

This plant is found in Lower and Upper Sonoran Zones, and is distributed from central and southeastern Arizona to Kansas, Texas, and the states of Chihuahua and northeast Sonora in Mexico. In Arizona it is found from Fort Apache in southern Navajo County to Mohave County, and south to Greenlee, Cochise and Pima Counties at elevations of 2000 to 5000 feet. It is common on dry, rocky slopes and mesas, and is often found on limestone. Flowering is from March through November. The plants shown on this page were photographed in northeast Maricopa County near Sycamore Creek at about 2500 feet elevation.

REFERENCES

Kearney & Peebles, ARIZONA FLORA
Munz, P. A., A CALIFORNIA FLORA
Shreve & Wiggins, VEGETATION AND FLORA OF THE SONORAN DESERT

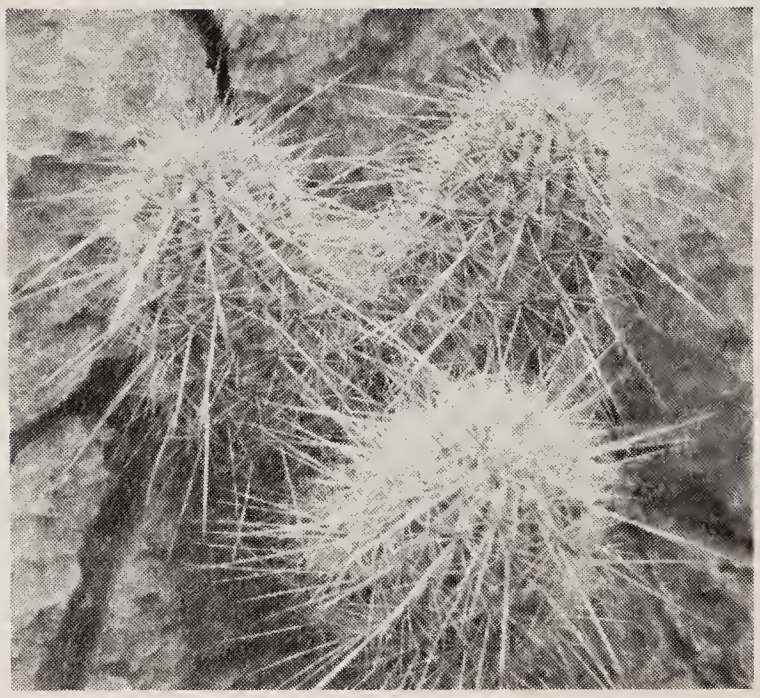
# ASPECTS OF THE DESERT




Not verbenas, but sand-verbenas are these plants from sandy, open desert places. They belong to the Four-o'clock Family, and are not even distant relatives of the Verbena Family, although the flowers resemble those of the true Verbena.

## Echinocereus longisetus — Cactaceae

# BRISTLE HEDGEHOG



This little-known hedgehog cactus was first discovered in 1853 at Santa Rosa, Coahuila, Mexico, about 100 miles south of the Rio Grande River. Dr. Englemann described it as **Cereus longisetus** in Proceedings of the American Academy in 1856. Later Rumpler assigned it to **Echinocereus longisetus** in Forester Handbook of Cacti, in 1885.

Britton and Rose, in Cactaceae 1921, state that fruits or flowers were never collected. J. Borg, in Cacti, 1937, describes the flower as being red. Helia Bravo, in Las Cactaceas de Mexico, also indicates the flower is red.

Curt Backeberg in Die Cactaceae mentions the flower as being 6 cm. long and as broad, petals lanceolate, 4 cm. long, ovary green.

During our expedition through Mexico in May 1966 we collected **E. longisetus** on hilly slopes ten miles south of Pedricena, Coahuila, which is about 180 miles south of the Santa Rosa location. The plants grow in isolated areas and are apparently infrequent bloomers, as we have never seen flowers or fruit. The plants we have in our collection are growing well, but have never flowered.

This is a very spiny plant with erect stems six to ten inches tall, each about one and one-half to two inches thick, having 14-18 ribs bearing three or four white flexible central spines one to one and one-half inches long, and 9-14 white radial spines arising from a small white areole. The plant is somewhat caespitose, with many stems arising from the base of the plant.

It grows well in partial shade in this area, but in its native habitat it is found growing in full sun in the cracks of a shale-like formation at 1800 feet elevation.

DBG photo

Habitat of *E. longisetus* S. of Pedricena, Coahuila, Mexico.

## Runyonia longiflora Rose

## Fam. Agavaceae

**Runyonia longiflora** is a herbaceous perennial that is acaulescent and forms a single rosette about 40 cm. in diameter. It dies back to a tuberous rootstock during its dormant period. There are from 15 to 25 leaves, each being 15 to 30 cm. long and 13 to 20 mm. broad at the middle. These are flexible and linear, tapering gradually to a dry, nonpungent, often recurved tip. The leaf is deeply channeled down the face, and is of a light glaucous green color, copiously spotted with purplish-brown blotches on the upper surface and along the margin of the lower surface. The margin is dentate with small white teeth. Inflorescence is a lax spike rising from one-half to one meter in height and bears from 15 to 45 flowers. The corolla is about 5 cm. long, the tube being subcylindrical, much longer than the recurved segments. The tube measures 3.5 to 4 cm. and the segments 10 to 13 mm. in length. In color, the tube and lower surfaces of the segments are rose; the upper segment surfaces are at first white, becoming rose pink. Filaments are adnate to the tube and the stamens are exserted but near the mouth of the tube. Anthers are light green, about 4 mm. long. The style extends a little more than half the tube length and bears a trilobate stigma. The flowers are very sweet-scented. Capsules are oblong, 10 to 15 mm. long and 10 mm. wide. The shiny black seeds are small, thick, and irregular in shape. They measure about 3 mm. in diameter and 2 mm. in thickness.*

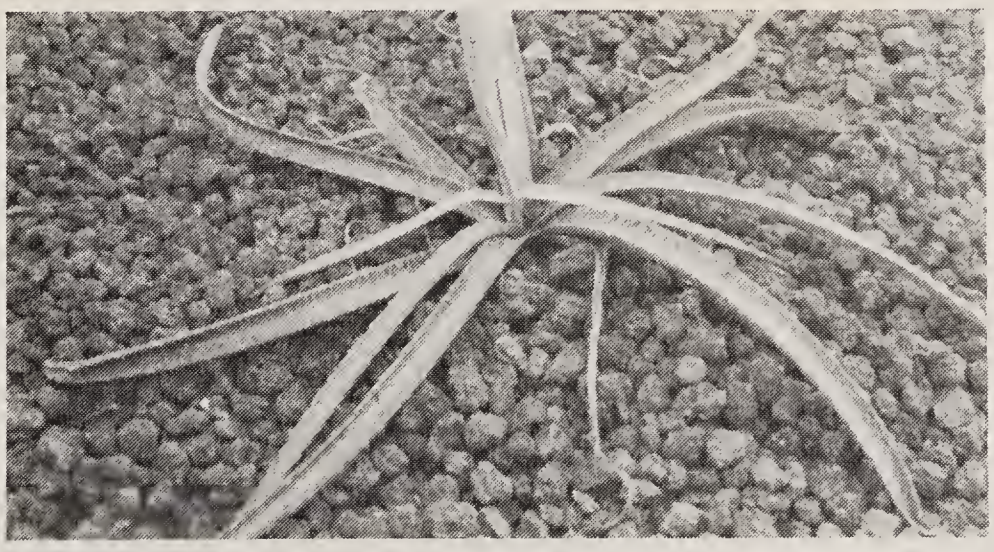
Distribution of **Runyonia longiflora** is limited and not fully known. It is found in Starr County, Texas, near Rio Grande City.

**Runyonia** is not found in many collections and is usually treated as a potted specimen plant. Only in recent years has it been available to any extent and it is hoped that it will now be used more frequently for both indoor and outdoor plantings. It has thrived at the Desert Botanical Garden, withstanding temperatures ranging from 20° to 115° F, and it seems to do best in this low desert area if given partial shade. If planted out in a desert garden, protection from rodents should be afforded, for they will crop both the leaves and emergent spike. Propagation is by seed, and seedling growth rate is slow.

REFERENCES

Cactus and Succulent Journal, Vol XXXIV, Mar.-Apr. 1962, No. 2, page 50

*Description drawn from plants in cultivation.



DBG photo

*Runyonia longiflora* in the Garden's Succulent Lath House.

# MEMBER'S GARDEN—IX

Herb and Angela Bool have been members of the Garden since its formation in the early '30's. Angela has been the faithful secretary to the garden's Executive Board since 1948.

Their home and garden is set in an orange grove on the south side of Camelback Road facing Squaw Peak (shown in above photo) due north of their home, while Camelback Mountain is quite close by.

Their front and back 'lawns' are filled with specimen cacti admired by many visitors who daily stroll along the paths well shaded by Palo Verde trees.

Herb and Angela have over the years contributed greatly to the beauty of the valley with their knowledge of how to landscape with desert plants.

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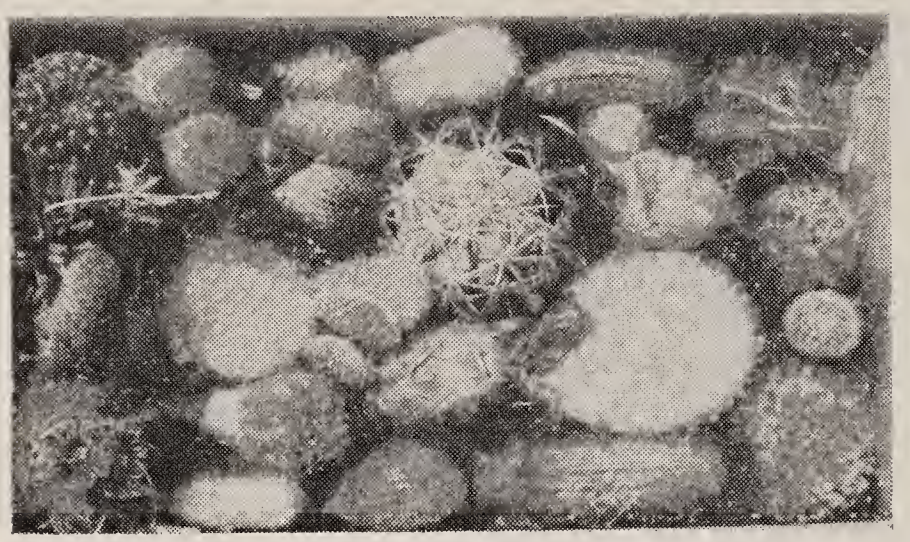

Planting and cultural directions are on each of these boxes of clean, bright cactus. Many of these plants will bloom in the spring. Be sure and let us know if you want either botanical or common names of the plants.

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Why haven't we had a book like this before? All of us who are native Arizonans (and that includes everybody here for more than twelve months), our visitors, and all our "back east" friends have needed a book that tells "what Arizona is really like" for years and years.

Of course the reason we haven't had it until now is that Reg Manning is the only person able to write and illustrate it, and Reg, Pulitzer Prize cartoonist, is a fantastically busy man. Never mind, here's the book, and it's wonderful.

Writing and sketches are hilarious and accurate—some combination!—and the subjects covered are: history, pre-history, indians, missions, mines, climate, cactus, horned toads, quail, trips to take, wild old Tombstone and space-age Kitt Peak Observatory—and more, more, more. All of Arizona, in fact.

There's so much here about all of everything in Arizona that you'd be well advised to buy a copy for yourself, for your out-of-state friends, your Arizona friends, and everyone on your Christmas list. You can buy your copies (and we hope you will) from the Garden's bookstore Add 15 cents per copy for postage, or simply come and get it!

---

(Editor's Notes continued)

Pasadena and Mrs. A. W. Doney's in Monrovia have prospered this summer.

Bob Diehl, Vista, gave the Garden two lovely specimen plants that are now in planters at the entrance to our Library.

It was a wonderful summer of work and travel, and so good to see so many friends of the Garden in the Southwest, yet so good to come back to our wonderful Desert Botanical Garden. My greatest regret was that my wife, Lois, who passed away last January, could not be along to enjoy all the pleasant experiences.

Our Fall Program will start this month with classes, illustrated lectures, nature trips, meetings and tours. This should be another year of great activity. Many schools, college classes, garden clubs and conventions have already scheduled visits to the Garden for 1968-69.

---

Would you like to make a gift to the Library of a newly published and needed book? Your gift will be really yours, for we have designed a handsome new bookplate for gift books which will bear the name of the donor. If your gift is in memory of some loved one, that, too, will be inscribed. Do phone the Garden to learn what new books are needed to enrich the Library, pick the one you want to give, and we'll order it and inscribe it with your name.

DBG photo

A large 12″ tall clump of *Echinocereus longisetus* described on p. 104.

## GARDEN ACTIVITIES

### NOVEMBER

| | | | |
|---|---|---|---|
| Sun. | 3rd | LECTURE—Arizona Cacti | 3 P.M. |
| Wed. | 6th | CLASSES—Deserts How Formed and their Plants | 3 & 8 P.M. |
| Thurs. | 7th | LECTURE—Arizona Cacti | 3 P.M. |
| Sat. | 9th | NATURE TRIP | 9 A.M. |
| Sun. | 10th | LECTURE—Arizona Wildflowers | 3 P.M. |
| Wed. | 13th | CLASSES—Desert Succulent Plants | 3 & 8 P.M. |
| Thurs. | 14th | LECTURE—Arizona Wildflowers | 3 P.M. |
| Sun. | 17th | LECTURE—Arizona Trees and Shrubs | 3 P.M. |
| Wed. | 20th | CLASSES—Culture of Succulent Plants | 3 & 8 P.M. |
| Thurs. | 21st | LECTURE—Arizona Trees and Shrubs | 3 P.M. |
| Sun. | 24th | LECTURE—Arizona Birds and Animals | 3 P.M. |
| Wed. | 27th | CLASSES—Desert Trees and Shrubs | 3 & 8 P.M. |
| Thurs. | 28th | LECTURE—Arizona Birds and Animals | 3 P.M. |

### DECEMBER

| | | | |
|---|---|---|---|
| Sun. | 1st | LECTURE—Arizona Scenics | 3 P.M. |
| Wed. | 4th | CLASSES—Culture of Desert Trees & Shrubs | 3 & 8 P.M. |
| Thurs. | 5th | LECTURE—Arizona Scenics | 3 P.M. |
| Sat. | 7th | NATURE TRIP | 9 A.M. |
| Sun. | 8th | LECTURE—Unusual Succulent plants | 3 P.M. |
| Wed. | 11th | CLASSES—Landscaping with Desert Plants | 3 & 8 P.M. |
| Thurs. | 12th | LECTURE—Unusual Succulent Plants | 3 P.M. |
| Sat. | 14th | DESERT FIELD TRIP for evening class | 9 A.M. |
| Sun. | 15th | LECTURE—Unusual Cacti in Flower | 3 P.M. |
| Wed. | 18th | DESERT FIELD TRIP for afternoon class | 9 A.M. |
| Thurs. | 19th | LECTURE—Unusual Cacti in Flower | 3 P.M. |
| Sun. | 22nd | LECTURE—Cacti of Mexico | 3 P.M. |
| Thurs. | 26th | LECTURE—Cacti of Mexico | 3 P.M. |
| Sun. | 29th | LECTURE—Arizona Cacti | 3 P.M. |

# SAGUARO LAND BULLETIN

DESERT BOTANICAL GARDEN of ARIZONA

Vol. XXII December, 1968 No. 10

## Season's Greetings

DBG photo

Twenty-inch chains of *Cylindropuntia fulgida*'s proliferous fruits. See page 116

REG MANNING

# SAGUAROLAND BULLETIN

Published and owned by the Arizona Cactus and Native Flora Society, sponsors of the Desert Botanical Garden of Arizona, P. O. Box 5415, Phoenix 85010. Saguaroland Bulletin attempts to promote the Garden and to provide information on the desert plants and their culture. Subscription $5.00 per year, the subscription including active membership in the Society and the Desert Botanical Garden. Issued 10 times a year.

W. HUBERT EARLE, Editor
LILLIAN DIVEN, Associate Editor

Volume XXII | December, 1968 | No. 10



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# Editor's Notes

We extend to all our Members and friends **Season's Greetings** and best wishes for another year of health and happiness from the Garden's Boards, staff and volunteer workers.

We wish to announce that the Garden's **membership** went over the 900 mark in early November. This is the highest to date. When the Garden reopened in December 1946 under the late W. Taylor Marshall there were only 19 members. We are now sending the Bulletin to members in 22 different countries.

The **fall classes** started last month with 28 in the Wednesday afternoon class, and 26 in the evening class. Class field trips will be made to Beeline Highway, Saguaro Lake and Vista Point on December 14 for the evening class and December 18 for the afternoon class. If you missed enrolling in the fall class you will have an opportunity to join the winter class beginning Wednesday, January 8.

**Nature trips** for Garden members are again being held each month. The November trip took us to Mr. and Mrs. Lee BeDillon's fine old cactus garden in Casa Grande and their wonderful museum of Indian artifacts. We all enjoyed their hospitality. The December trip will be to the Sierra Estrella Mountains via St. John's Mission. It will be on December 7th. Check your program of activities card for dates of future trips.

**Cactomaniacs** were treated to an excellent program last month by Dr. Victor Miller, Professor of Horticulture, Arizona State University, who showed his excellent slides of Hawaiian shrubs and trees in flower.

At the December meeting the Cactomaniacs, as in past years, will each show (at least the picture takers will) ten to fifteen of their best-of-'68 slides. It is surprising what good photographers we have. Using equipment from simple Instamatics to Leicas, the results are always excellent.

On **November 11** staff member Lynn Trainum and your Editor drove over to California and returned on the twelfth with a van-load of specimen cacti from Bob Diehl of Vista, and showy leaf succulents from Mrs. Arthur W. Doney of Monrovia. We really appreciate the generosity of these members giving us the plants, which are now planted in our lath houses and in the Garden to be seen by the many Garden visitors.

**Arboretum and Botanical Garden Bulletin,** subscribed to monthly by American and foreign botanical gardens, had on their recent front cover a full photo of our garden taken by your Editor. It depicted the use of yuccas for desert planting with Barnes Butte in background. This is one of our demonstration plots designed and built by our horticulturist, John Weber.

## Phlox longifolia

## Polemoniaceae
## Phlox Family

# WILD SWEET WILLIAM

The delicate crumpled petals of this flower, white to various intensities of pink, appear in a loose three-or-four-flowered terminal corymb. Leaves are narrowly linear, and the plant is usually only three to twelve inches high, so that each small half-inch-wide flower is a separate display, as well as being part of the beauty of a whole group of flowering plants.

**Phlox longifolia** is found in Arizona on dry, sandy or rocky slopes at elevations to 7000 feet. It blooms in the spring. (The accompanying photographs were taken in mid-April in Peralta Canyon, east of Apache Juunction, at 2800 ft. elevation. The plants are taller than average, about 24 inches, but this is due to their growing in partial shade.)

This is a perennial, with a slightly woody base. The one-to-three-inch leaves are smooth or somewhat downy, stiffish, and pale gray-green. The stems vary from nearly prostrate to erect. The corolla tube is one-half inch long, and the five united petals are each half as long as the tube. The corolla is so tightly rolled up in the bud that the petals often remain more or less twisted in the open flowers.

Although called "Wild Sweet William" (as are several other wild phloxes), it must not be confused with the garden Sweet William, which is a **Dianthus,** or Pink. **Phlox longifolia** is used horticulturally, at least in England, although Bailey's "Hortus" does not mention it as being in cultivation here.

Considered as a range plant, phlox has some value. Sheep eat the flowers, although the small-leaved foliage is usually avoided. The root system makes the plants effective soil binders.

REFERENCES


Armstrong, M., Field Book of Western Wild Flowers

Kearney & Peebles, Arizona Flora

McDougal, W., Grand Canyon Wild Flowers

Royal Horticultural Society, Dictionary of Gardening

USDA, Forest Service, Range Plant Handbook

DBG photo

Hillside covered with *Phlox longifolia*

# "—and a Phainopepla in a Pithecolobium tree!"

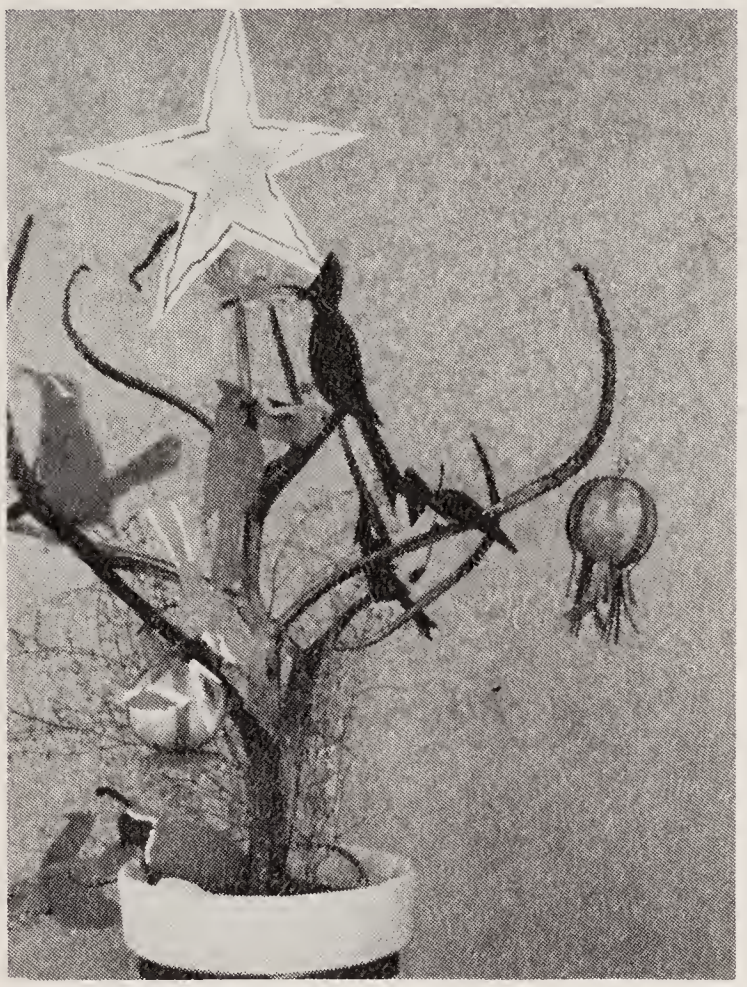
Also a hummingbird and a cardinal and a cactus wren, and a quail and oriole and white-winged dove, and a roadrunner and mockingbird and a cactus wren. And on a boat-spined acacia tree, graythorn, creosote bush, yellow paloverde, aloe and haematoxylon.

What IS this all about?

It's about the Garden's Christmas decorations, which are less mad-looking than mad-sounding, as the pictures here show. The idea, as every year, is to use some kind of desert material an a desert theme, so we potted various desert tree branches in sand-filled pots, and perched on them our desert birds, added a paper star and a few desert gourds.

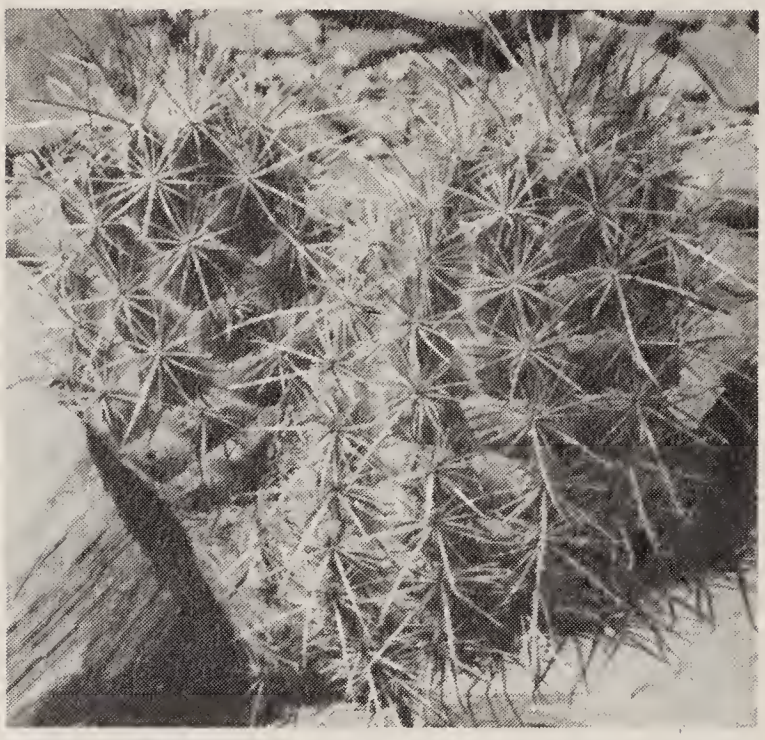
About those gourds: they are unpainted, in their natural green-flecked or yellow colors, and decorated with glued-on paper patches and strips. The result is gay Christmas balls that are still identifiable gourds.

Creators of this improvement on partridges and pear trees were: Isabel Holt, Joy Lee Schroeder, Eleanor Radke, Verjean Houck, and our staff. Merry Christmas to and from all.



# NEOLLOYDIA CONOIDEA B & R

# CACTACEAE



DBG photo

*Neolloydia conoidea* growing in shale

This attractive miniature cactus is found growing in the Mexican states of Zacatecas, Durango, Coahuila and north into Texas amongst rocky shale and gravel. Some hillsides are covered with these silver-and-black-spined plants that have lovely large lavender to purple flowers up to two inches in diameter on their apex, flowering from April to June.

It is usually a simple plant but sometimes forms large clusters (up to ten heads) fourteen inches in diameter and nine inches high.

The tubercles spiral upward in a characteristic manner of five to eight rows with wool in their axis. The long silver-and-black-tipped spines often conceal those obtuse tubercles. The fruits are flattened, globose and orange in color, later becoming papery dry. Seeds are brown.

These easy-to-grow plants have a cultivation similar to **Neolloydia texensis.** They should be kept dry in the winter, and watered in the early spring. Taper off the watering in the fall. They must have good drainage otherwise they will rot.

TYPE LOCALITY: Mexico

DISTRIBUTION: Northern Mexico

REFERENCES:

Britton & Rose, CACTACEAE

Borg, J., CACTI

Bravo, Helia, LAS CACTACEAS DE MEXICO

Marshall, Taylor, CACTACEAE

DBG photo

Hillside at Parras de la Fuente, Coahuila, Mexico, with *Epithelantha micromeris, Echinocereus straminius, Agave lechuguilla, Neolloydia conoidea.*

# ASPECTS OF THE DESERT

Monument Valley, in Navajo country, lies athwart the Arizona-Utah border. It is too hot, too cold, too windy, but outstandingly beautiful, with its red sandstone spires and buttes rising 1000′ from the 5000′ elevation of the valley floor, and an intensely blue sky over all.

# JUMPING CHOLLA
# CHAIN-FRUIT CHOLLA

This large cholla was found in western Sonora, Mexico during the Mexican Boundary Survey and described by Dr. George Engelmann in Proceedings American Academy 3:306 1856 as **Opuntia fulgida.** It was listed as Sp nov. in the 1859 Report of the United States and Mexican Boundary Survey under order of Lt. Col. W. H. Emory, Major First Cavalry and United States Commissioner.

**Cylindropuntia fulgida** (fulgida: shining, glittering; referring to the spines) was named by the Indians of western Sonora as "Velas de Coyote" (Candles of the Wolf) hence its specific name. These large plants are up to twelve feet tall with many open black branches each bearing large shining heads with dangling chains of proliferous fruits. These chollas are quite conspicuous, forming dense forests and practically eliminating other forms of cacti and other plants. Their shiny spines will readily attach themselves to passing animals or persons coming in contact with the plant, causing acute pain and discomfort, sometimes necessitating the removal of the spines by a surgeon.

**C. fulgida** ranges from north of Superior, Ariz. south through western Sonora on the valley slopes and lower foothills where the soil is gravelly and sandy.

The plants bloom from April to August with one-inch-wide light rose to lavender rotate and cupped flowers. Fruits are a gray-green, fleshy oval, rounded, sometimes slightly tuberculated but usually smooth. The spineless fruits are acrid in taste but often eaten by cattle, deer and javelinas. The fruit contains a sticky mucilaginous green substance bearing small dark seeds that seldom germinate.

The dark trunks and branches are used by the manufacturers of cactus-wood novelties who first knock off the black bark holding the spines, then shake out hiding scorpions and small snakes who inhabit the inner hollow centers of these trunks and branches. The wood is brushed with wire brushes then dipped in a bleaching solution before being fabricated.

**Type locality:** Mountains of western Sonora, Mexico.

**Distribution:** Southern Arizona, Sonora & Sinaloa, Mexico.

REFERENCES:

Benson, Lyman, CACTI OF ARIZONA

Britton & Rose, CACTACEAE

Earle, W. H., CACTI OF THE SOUTHWEST

Engelmann, G., CACTACEAE OF THE BOUNDARY

# ALOE ALBIFLORA Guillaumin

Fam. LILIACEAE

**Aloe albiflora,** a small succulent perennial, is acaulescent with the leaves in a rosette. The form is that of a small cluster, as the offsets are few. There are from 10 to 15 ascending leaves with long tapering tips. These narrow, often twisted, leaves, extend to 20 cm. in length and 14 mm. in breadth at their bases. Leaf surfaces are roughened with small hard prominences and the olive green base color is overlaid by an irregular crowding of small white spots. The cartilaginous margin is dentate with small triangular white teeth. Inflorescence is a simple lax raceme rising 30 to 36 cm. in height, bearing from 15 to 20 flowers. Flowers are wide campanulate, 10 mm. long, and about 14 mm. broad. Perianth segments are white, the outer with dark mid-stripes. Segments are free nearly to the base. The filiform filaments are white and attached at the base. Anthers are yellow to orange and unequally exserted. Style is white and also exserted.

Distribution is limited to the Malagasy Republic, formerly known as Madagascar.

DBG photo

*Aloe albiflora* with dainty white flowers and exserted style

DBG photo

A potted *Aloe albiflora* with twenty-four inch tall flower stalks

**Aloe albiflora** was first described in 1940 and only now is becoming a species encountered in collections. It is one of a number of small Aloes particularly adapted to pot culture. These for the most part are not cold tolerant and being of small size can be easily moved indoors. It is not specific in soil requirements and thrives at high temperatures if given partial shade. At the Desert Botanical Garden it flowers in November and begins earlier than most other Aloes. This dainty flowering Aloe is unusual in its flower color and is highly recommended for those who must grow their plants in containers.

REFERENCES:

Jacobsen, H. — A Handbook of Succulent Plants

Reynolds G. W. — The Aloes of Tropical Africa and Madagascar.

## MEMBER'S GARDEN — X

You can do all sorts of things with the desert — some of them pretty ghastly — but if you frankly love the desert, as Reg Manning does, you don't plant magnolias and plastic flamingos, and you don't crowd dozens of plants in a lush, un-desertlike jumble.

The Mannings built their home in the desert north of Barnes Butte about 15 years ago — a long, low "unaggressive" house of sand-colored block and pale rock roof. They left every creosote bush and prickly pear that grew on their land, and added native desert plants in sparse desert-type groupings accented with large desert boulders. Seedling ironwoods and palo verdes are now tree size. The cacti Reg transplanted himself over the years are growing handsomely, the big yuccas are towering fellows, and everything looks as if it "just grew" — which is exactly what Reg wanted.

## Books, New and Noteworthy

**EDIBLE NATIVE PLANTS OF THE ROCKY MOUNTAINS.** H. D. Harrington. Illustrated by Y. Matsumura. Univ. of New Mexico Press, 1967. 392 pp. $8.95.

Tumbleweed for dinner, anyone? How about nettle soup? Filaree salad, Mrs. Blehm's Nightshade Pie, or Navajo Cottage Cheese? And Devilsclaw Pickles? Recipes for all of them are here, and many others besides.

Westerners who enjoyed Euell Gibbons' "Stalking the Wild Asparagus", that delightful collection of wild food lore and recipes, have wished that Mr. Gibbons hadn't been so east-of-the-Rockies. Dr. Harrington's latest book concentrates on the Rocky Mountain States, mainly the mile-high-or-higher areas, but includes plants that grow in our desert, and gives us now a chance to try—if we dare—some of the wild food near home.

Don't be misled into thinking this is a "cute" book. The author's style is charming, but his presentation is serious, more oriented in the direction of botany and ethnobotany than Gibbons' books. All the plants have detailed botanical illustrations, for correct identification by the would-be gourmet or hunter of wilderness survival food. Much attention is given to the uses of each plant, when it's edible and what parts are edible. Even the taste (and sometimes aftertaste) and textures are described. Almost all of the plants described—except the poisonous ones, of course—were cooked and tasted by Professors Harrington and Matsumura and their assistants.

Yes, there's a section on poisonous plants here, to help you learn what to avoid, and a set of rules to follow if you wish to try a new likely-looking plant.

Botanists, indiophiles and cooks should like this book. For the cooks, here's the tumbleweed recipe:

**"The young, rapidly growing shoots around 2 to 5 inches tall make a very good potherb. We clipped off the roots, and boiled the tops for 12-15 minutes, without a change of water. Served like spinach with salt, pepper, and butter; or with the addition of vinegar or lemon juice, we found Russian thistle (tumbleweed) plants mild, pleasant and crisp tasting, making them one of the very best potherbs we have ever eaten. They can be dressed up with fried bacon strips or stirred into a cream sauce and served over toast. Because of the bland taste they can be mixed to good advantage with other more 'tangy' plants such as mustard."**

SONNETS OF THE SOUTHWEST and CANYON SHADOWS. Both by Lou Ella Archer. Drawings in color and black-and-white by Lillian W. Smith. $3.00 each. (For mail orders, add 15 cents per volume).

These two handsome books of sonnets, first published many years ago, have caught and kept the affection of people who love the Southwest. Few other poets have ever approached Miss Archer's ability to put into words the beauty of our desert and mountain country, not only the physical beauty, permanent or evanescent, but also the spiritual beauty.

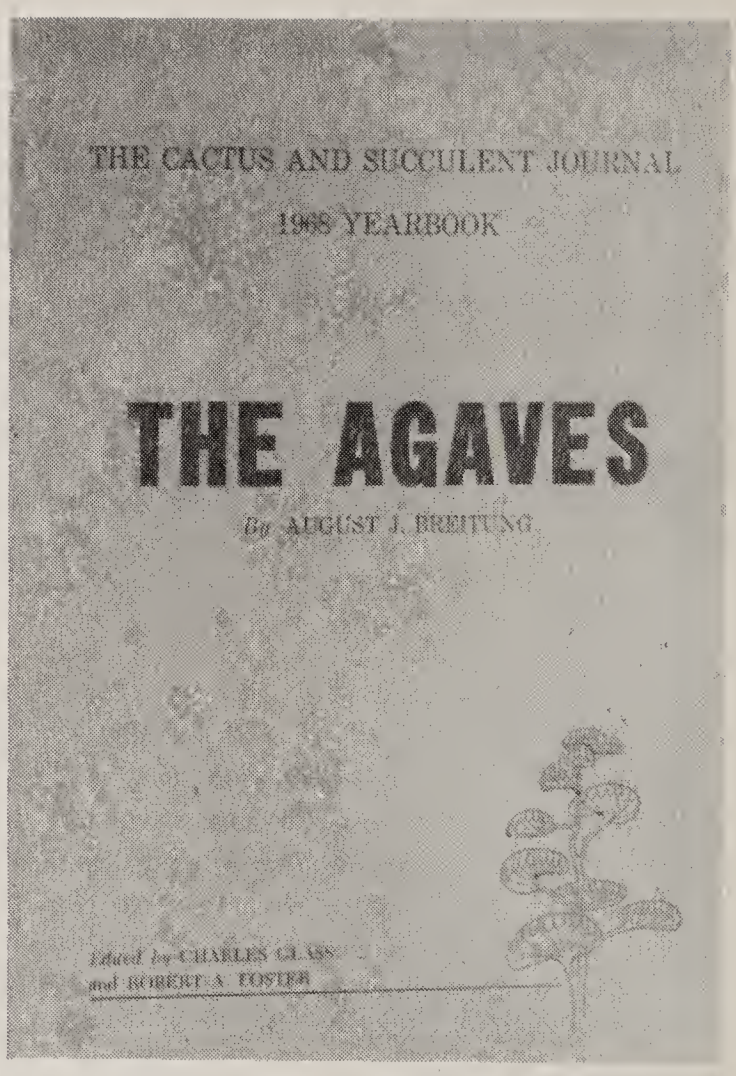
(We have just recently acquired the last remaining copies of both these books. The number is limited, and they will be available for only a short time.)

THE AGAVES, Cactus & Succulent Journal 1968 Yearbook. By August J. Breitung. 106 pp., 260 illust., index, $3.95.

The collection of Breitung's articles from the C&S Journal into one volume has been looked forward to for some time.

There is no other book in print on this large and popular genus. The author has himself photographed all species and forms described in the book, and the pictures are excellent — the whole plant, a close-up of leaf detail, and frequently the inflorescence. A welcome detail: with each picture Breitung has indicated the size of the plant. Not enough authors do.

An excellent book, and a welcome addition to the bookshelf of anyone who agrees with the author that "agaves have an aesthetic value which cannot be measured. No other group furnishes such a variety of decorative plants."




## GARDEN ACTIVITIES

### DECEMBER

| | | | |
|---|---|---|---|
| Sun. | 1st | LECTURE—Arizona Scenics | 3 P.M. |
| Wed. | 4th | CLASSES—Culture of Desert Trees & Shrubs | 3 & 8 P.M. |
| Thurs. | 5th | LECTURE—Arizona Scenics | 3 P.M. |
| Sat. | 7th | NATURE TRIP | 9 A.M. |
| Sun. | 8th | LECTURE—Unusual Succulent plants | 3 P.M. |
| Wed. | 11th | CLASSES—Landscaping with Desert Plants | 3 & 8 P.M. |
| Thurs. | 12th | LECTURE—Unusual Succulent Plants | 3 P.M. |
| Sat. | 14th | DESERT FIELD TRIP for evening class | 9 A.M. |
| Sun. | 15th | LECTURE—Unusual Cacti in Flower | 3 P.M. |
| Wed. | 18th | DESERT FIELD TRIP for afternoon class | 9 A.M. |
| Thurs. | 19th | LECTURE—Unusual Cacti in Flower | 3 P.M. |
| Sun. | 22nd | LECTURE—Cacti of Mexico | 3 P.M. |
| Thurs. | 26th | LECTURE—Cacti of Mexico | 3 P.M. |
| Sun. | 29th | LECTURE—Arizona Cacti | 3 P.M. |

### JANUARY

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| Thurs. | 2nd | LECTURE—Cacti of Mexico | 3 P.M. |
| Sun. | 5th | LECTURE—Arizona Wildflowers | 3 P.M. |
| Wed. | 8th | CLASSES—Deserts How Formed & Their Plants | 3 & 8 P.M. |
| Thurs. | 9th | LECTURE—Arizona Wildflowers | 3 P.M. |
| Sat. | 11th | NATURE TRIP | 9 A.M. |
| Sun. | 12th | LECTURE—Arizona Trees & Shrubs | 3 P.M. |
| Wed. | 15th | CLASSES—Desert Succulent Plants | 3 & 8 P.M. |
| Thurs. | 16th | LECTURE—Arizona Trees & Shrubs | 3 P.M. |
| Sun. | 19th | LECTURE—Arizona Birds and Animals | 3 P.M. |
| Wed. | 22nd | CLASSES—Culture of Succulent Plants | 3 & 8 P.M. |
| Thurs. | 23rd | LECTURE—Arizona Birds and Animals | 3 P.M. |
| Sun. | 26th | LECTURE—Arizona Scenics | 3 P.M. |
| Wed. | 30th | CLASSES—Desert Trees & Shrubs | 3 & 8 P.M. |
| Thurs. | 30th | LECTURE—Arizona Scenics | 3 P.M. |